IN THE UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MISSOURI
EASTERN DIVISION

ASARCO LLC, Plaintiff, v. NL INDUSTRIES, INC., *et al.*, Defendants.	Case No.: 4:11-cv-00864 JAR

PLAINTIFF'S SEPTEMBER 11, 2014 STATUS REPORT ON GOVERNMENT REMEDIATION

Pursuant to the Court's Order dated March 11, 2013 (Dkt. No. 141), Plaintiff ASARCO LLC ("Asarco") provides this Status Report Regarding Remediation of the Southeast Missouri Mining District ("SEMO" or "SEMO Sites"),[1] in connection with its Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA") contribution action.

It has been nearly three and a half years since Asarco first filed its Complaint, seeking its day in court for cost recovery under CERCLA because others did not pay their fair share of cleanup costs. In fact, it has been approximately five and a half years since Asarco agreed to pay nearly $80 million to settle its joint and several liability under CERCLA with the United States Environmental Protection Agency ("EPA") and the State of Missouri, premised on its ability to seek contribution from third-parties, such as the Defendants, who refused to pay their share of

[1] SEMO is comprised of five sub-sites: (a) Madison County / Catherine Mine ("Madison County"); (b) Big River / Federal Mine Tailings / St. Joe. Minerals Corporation ("St. Francois County"); (c) West Fork Mine; (d) Sweetwater Mine; and (e) Glover Smelter.

the cleanup of the toxic mining waste covering SEMO. Given the number of years that have passed since Asarco's settlement with the government, its payment of tens of millions of dollars and its institution of this litigation, coupled with the substantial progress and the clear federal precedent discouraging indefinite stays,[2] it would be appropriate after conclusion of the *Lone Pine* hearing to enter a new Modified Case Management Order and allow this case to proceed on its merits.

Furthermore, remediation and remediation decisions at SEMO have progressed to a level at which an accurate estimate of response costs can be made, and allocation/contribution decisions can certainly be based on expert estimates. *See Am. Cyanamid Co. v. Capuano*, 381 F.3d 6, 27 (1st Cir. 2004). It is not necessary, in other words, for EPA to have finished removing every shovel-full of contaminated soil for Asarco's contribution claims to be ripe for adjudication. *Chem-Nuclear Sys. v. Clinton*, No. 96-1233, 2000 U.S. Dist. LEXIS 14365 at *21 (D.D.C. Sept. 18, 2000). The United States District Court for the Western District of Texas recently entered final judgment for Asarco on a similar contribution claim that also stems from a

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[2] *See King v. Cessna Aircraft Co.*, 505 F.3d 1160, 1172 (11th Cir. 2007) ("We have repeatedly held that a stay order which is 'immoderate' and involves a 'protracted and indefinite period' of delay is impermissible."); *CTI-Container Leasing Corp. v. Uiterwyk*, 685 F.2d 1284, 1288 (11th Cir. 1982) (reversing a stay order, reasoning: "It is difficult to accurately predict the time that CTI will be forced to stand aside if it is required to await . . . [what] can safely be described as an indefinite period of time. We cannot uphold such an indefinite or immoderate stay . . . ."); *McKnight v. Blanchard*, 667 F.2d 477, 479 (5th Cir. 1982) ("The district court has a general discretionary power to stay proceedings before it in the control of its docket and in the interests of justice. Nevertheless, stay orders will be reversed when they are found to be immoderate of an indefinite duration."); *Hines v. D'Artois*, 531 F.2d 726, 733 (5th Cir. 1976) (opining that a stay that was "indefinite in duration, but in all probability [would] remain in effect at least eighteen months, and might last for as long as five years" was "sufficient for us to scrutinize the reasons for [the stay] very closely"); *McSurely v. McClellan*, 426 F.2d 664, 671 (D.C. Cir. 1970) (stating that a district court's discretion to grant a stay "may be abused by a stay of indefinite duration in the absence of a pressing need") (citation omitted).

settlement Asarco entered during the course of its bankruptcy. *See ASARCO LLC v. CEMEX, Inc.*, 3:12-cv-0155-PRM, 2014 U.S. Dist. LEXIS 68593 (W.D. Tex. March 13, 2014) (attached as Exhibit 1). Although the court acknowledged that "[r]emediation of the USIBWC Site has not yet occurred, nor have bids been issued for the work[,]" the court examined and weighed the relevant expert testimony and determined that defendant CEMEX, Inc. was liable for approximately 5% of the cost of remediation. *Id* at 5. The court accordingly, awarded Asarco $1.1 million. *Id.* at 70. In other words, in a situation where remediation has not yet even begun, the Western District of Texas proceeded to use the available evidence to adjudicate Asarco's claims.

Similarly, at a site where the final remedy has not yet been decided, the United States District Court for the Eastern District of Washington denied defendant's motion to stay. *See ASARCO LLC v. Hecla Mining Co.*, 2:12-cv-0381-LRS (E.D. Wash. May 2, 2014) (attached as Exhibit 2). The court found that:

> this case can proceed, even recognizing that the exact final remediation cost may not be ascertainable at this time. This is so because the case is ripe for determination of [defendant's] liability to Asarco, and if such liability exists, the shares of the parties based on a percentage of the total cleanup costs anticipated can be reasonably determined. These determinations are not dependent on a final cost being ascertainable at this juncture…

Id. at 5.

Here, remediation at SEMO is much farther along than that in *CEMEX* where bids for work had not even been issued or in *Hecla Mining* where a final remedy had not even been decided. Remediation at SEMO has been underway for years. The Court has enough information to decide contribution, and Asarco's contribution claims should be allowed to proceed.

As explained in detail in Asarco's Opposition to Union Pacific's Motion for Summary Judgment (Doc. No. 239), with leave from the Court, Asarco intends to file a Third Amended Complaint, reflecting its claims for contribution only as to St. Francois and Madison Counties. As such, the following status report provides an update only as to the remediation processes at St. Francois and Madison Counties. As this status report and the previous status reports indicate, these processes are straight-forward, underway and mostly complete, with the costs either finite or easily calculated based upon previous spent costs or with the assistance of expert testimony.

I. REMEDIATION UPDATE

A. *Cleanup of Madison County*

The Madison County Sub-site is located approximately 90 miles south of St. Louis, Missouri in an area of southeast Missouri known as the "Old Lead Belt" and includes all of Madison County and the "Mine LaMotte Tract" in southern St. Francois County. The cleanup at Madison County has been ongoing for well over ten years and is near completion.

Since Asarco's last status update, additional progress has been made. In May 2014, a preliminary basis of design for the remedial action at Catherine Mines and Skaggs Tailings Subsites of Madison County Mines was prepared. In July 2014, a proposed plan presented the preferred remedial alternative for the final record of decision for Operable Unit 3 to address the remaining residential properties, which includes yards, public areas, child high use areas, and also includes unimproved roadways, right-of-ways, storm water drainages and potable water at private wells in the halo of mine workings, tailings, and outflows. As of July 2014, the projected time frame to complete sampling and remediation of the remaining residential properties is two years.

Asarco paid a total of approximately $14.3 million in Madison County consisting of $12.7 million for response costs and $1.6 million for natural resource damages, despite the fact that Asarco's operations in Madison County were minimal and only limited to the Catherine Mine. The remediation at the Catherine Mine is basically finished, and it is being utilized as one of the soil repositories, which results in a financial benefit for USEPA and other PRPs (*i.e.* residential soil removal efforts can be performed at less cost since disposal at a permitted landfill is no longer necessary). Two other PRPs that the EPA has identified at Madison County include Defendants NL Industries, Inc. and Anschutz Mining Corporation. NL operated—both individually and through a joint venture—extensively throughout Madison County, including at Mine LaMotte and Madison County Mine. For decades, Anschutz has been an owner of the property that represented one of the largest mining and milling operations in all of Madison County, Madison County Mine, adjacent to Fredericktown. While both parties have contributed to the clean-up of the Madison County Mine, they should likewise contribute to the cleanup of the watershed and residential soils throughout the County, and NL should contribute for its share of the cleanup at Mine LaMotte and the other tailings piles created through its operations. Similarly, Defendant Union Pacific had rail operations throughout the entire county, constructed of mining waste that carried lead, zinc and cadmium-laden chat throughout the County, leaching into the watershed and causing uncontrolled natural resource damages. Union Pacific should also pay its share of the damages that its unchecked rights of way have caused to the County and its natural resources.

B. Cleanup of St. Francois County

The St. Francois County Sub-site is located 7 miles south of St. Louis and is composed of seven large areas of mine waste, approximately 110 square miles in size. In contrast to any efforts by Defendants to complicate the remediation processes, the clean up at both of these

counties generally consists of four areas: tailings piles, residential remediation, natural resource damages ("NRD") and watershed.

Since Asarco's last status update, additional progress has been made. The Federal Mines source pile is set for completion in early 2015. At the Federal Mine Tailing Sub-site, work has continued on stockpiling trail rock, improving the Off Road Vehicle Riding Area, covering open areas at the Borrow Pit Area, grading ditches and placing cover material over the Former Chat Pile Area, and final grading of sedimentation ponds and rocking the drainage channels and slopes at the Shaw Branch Creek Area. An extension was requested for the completion of the removal action activities that was set to be completed on July 21, 2014.

Treatment ponds are in development for the Elvins Mine Tailings Pile and Leadwood Mine Tailings Pile to reduce dissolved zinc moving off-site to Big River.

At Leadwood, a 30-acre cap on some areas that were left exposed is being done; there is a plan for putting a treatment basin on the north side of the site; options are being considered for erosion control; work began on the development of the post removal site control plan.

Additionally, as of the last status report, remediation of property soils was completed on more than 550 residential yards, 27 day cares, 16 schools, and 2 Head Starts and almost 300 additional properties were sampled in the last six months. The removal program has cleaned an additional 50 properties. Elevated blood levels tied to three yards were found. A yard remediation contract will be awarded by September 30, 2014 for up to 100,000 cubic yards for the next two years (ending September 30, 2016). Field work had been wrapped up for off-source areas, and a feasibility study should be complete by no later than fall 2015.

The EPA has also commenced remediation of the waterways for which Asarco paid millions of dollars in response costs to address. The Big River Watershed Master Plan – Final

Draft was completed on May 1, 2014. It addresses the impact of mine waste contamination in over one hundred miles of rivers and streams and adjacent floodplains, which are directly attributable to the operations of NL, Union Pacific Railroad Company ("Union Pacific") and St. Francois County Environmental Corporation ("SFCEC").

Asarco has paid a total of approximately $54.3 million in St. Francois County, consisting of $24.8 million for response costs and $29.5 million for natural resource damages. While response actions are being performed at the St. Joseph State Park, the former location of Federal operations (Asarco's predecessor), tens of millions of dollars are being directed to damages for which Asarco is not responsible. NL and Union Pacific both had extensive operations throughout the County, and Defendant St. Francois[3] instituted a landfill in the middle of a tailings pile, after which a massive tailings slide occurred in 1977, causing substantial damages to the neighboring communities and watersheds. All three of these Defendants should pay their respective contribution for the tens of millions of dollars in remediation that Asarco paid on their behalf.

IV. CONCLUSION

The status of EPA's work at the SEMO sites at issue in this litigation – St. Francois and Madison Counties – demonstrates that, assuming a stay of these proceedings was appropriate at the time it was entered,[4] the basis for such a stay is no longer valid. The Court's primary

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[3] Both NL and SFCEC have been identified as Potentially Responsible Parties by the EPA for the St. Francois County Sub-site.

[4] Asarco continues its objection to any stay of these proceedings and maintains its position that the stay was inappropriate *ab initio*, as set forth in its Memorandum in Opposition to Defendants NL Industries Inc., St. Francois County Environmental Corporation, and Delta Asphalt Inc.'s Motions to Stay (Doc. No. 115).

concern in entering the stay was that "[i]n order to determine Asarco's allocable amount of liability, the Court needs to know what the final cost will be." (Doc. No. 141 at 5.) As evident by Asarco's status reports to date, the costs of remediation at these sites is clearly readily ascertainable through expert or other evidence. *See Am. Cyanamid Co. v. Capuano*, 381 F.3d 6, 27 (1st Cir. 2004) (upholding contribution judgment based on district court's estimate of response costs). Without conceding that it was proper to delay Asarco its right to thoroughly litigate its claim in this court, EPA has now completed sufficient remediation planning and activities at the SEMO sites to justify advancement of this case to the damages phase.

Planning and cleanup of a number of the areas involved in this contribution action are either complete or almost complete. The stay should now be lifted given the substantially complete cleanup of the sites at issue in this litigation, Madison and St. Francois Counties. With liability admitted by three of the four Defendants (NL, Anschutz and SFCEC) and the upcoming submission of the issue to the Court as to the liability of the sole remaining Defendant (Union Pacific), allocation of liability can be established without further delay.

Dated: September 11, 2014

Respectfully submitted,

By /s/ Gregory Evans

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CERTIFICATE OF SERVICE

I certify that counsel of record who are deemed to have consented to electronic service are being served on September 11, 2014 with a copy of this document via the Court's CM/ECF system.

/s/ Gregory Evans

EXHIBIT 1

IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
EL PASO DIVISION

ASARCO LLC, a Delaware corporation, Plaintiff,	§ § § §	
v.	§ §	
CEMEX, INC., a Louisiana corporation, and CEMEX CONSTRUCTION MATERIALS SOUTH, LLC, a Delaware Limited Liability Company, Defendants.	§ § § § § § §	**EP-12-CV-155-PRM**

FINDINGS OF FACT AND CONCLUSIONS OF LAW

On this day, the Court considered the testimony and evidence presented by Plaintiff ASARCO LLC and Defendants CEMEX, Inc. and CEMEX Construction Materials South, LLC at a trial conducted before the Court from July 26 to August 1, 2013, in the above-captioned cause. The issue before the Court at trial was Plaintiff's claim for contribution pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA") and the Superfund Amendments and Reauthorization Act. After careful consideration of the testimony and evidence, the Court makes the following findings of

fact and conclusions of law pursuant to Federal Rule of Civil Procedure 52(a).[1]

I. FINDINGS OF FACT[2]

A. Background Facts

1. The USIBWC Site

The United States International Boundary and Water Commission ("USIBWC") oversees the administration of various treaties between the United States and Mexico, specifically those dealing with water distribution and flood control. Trial Tr. vol. I, at 159, July 26, 2013. At its site in El Paso (the "USIBWC Site"), the USIBWC oversees the diversion of water from the Rio Grande River to the American Canal (the "Canal"), a two-mile canal that the United States uses to remove its agreed-upon allotment of water from the river. Parties' Stip. Facts ¶ 34, July 25, 2013, ECF No. 169.

The USIBWC Site, which is located at 2616 W. Paisano Drive, comprises 5.8 acres that include the area surrounding the Dam and

[1] Any finding of fact more properly characterized as a conclusion of law shall be adopted as such, and any conclusion of law more properly characterized as a finding of fact shall be adopted as such.

[2] All findings of fact reflect the facts as they existed at the time of trial.

Canal as well as the American Dam Field Office Property. Parties' Stip. Facts ¶¶ 1, 33.[3] In 2002, during preparations to repair the Canal, the USIBWC discovered that the groundwater and soil around the Canal were contaminated with impermissibly high levels of heavy metals, particularly lead and arsenic. *Id.* ¶¶ 35–36; *see also* Pl.'s Ex. 187; Trial Tr. vol. I, at 176. In the soil around the Canal, arsenic was detected at concentrations up to 597 milligrams per kilogram ("mg/kg"), well above the EPA industrial screening level of 2 mg/kg. Pl.'s Ex. 9, ¶ 190; Pl.'s Ex. 187, at P-187-3 tbl.2-2. Lead was detected at concentrations up to 3500 mg/kg, again well above the industrial screening level of 2000 mg/kg. Pl.'s Ex. 9, ¶ 190; Pl.'s Ex. 187, at P-187-3 tbl.2-2. In the groundwater around the Canal, arsenic levels ranged from 0.07 milligrams per liter ("mg/L") to 1.84 mg/L, all above the EPA's maximum concentration limit of 0.01 mg/L. Pl.'s Ex. 9, ¶ 190; Pl.'s Ex. 187, at P-187-4 tbl.2-3. Lead levels in the groundwater ranged from 0.6 mg/L to 0.51 mg/L, above the EPA action level of 0.015 mg/L. Pl.'s Ex. 9, ¶ 190; Pl.'s Ex. 187, at P-187-4 tbl.2-3. The USIBWC concluded that

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[3] For a map of the area, including the USIBWC Site, Dam, Canal, former Asarco smelter, Toro Quarry, and former Cement Plant, see Pl.'s Ex. 162, which is also included in the appendix to this opinion, see *infra* p. 72.

the high levels of contaminants found on its Site were the result of Asarco's historic smelting operations, located immediately adjacent to the USIBWC Site. Pl.'s Ex. 9, ¶ 190.

2. USIBWC Settlement with Asarco

Plaintiff ASARCO, LLC ("Asarco") is a limited liability company organized under the laws of the state of Delaware. Parties' Stip. Facts ¶ 2. From 1887 to 1999, Asarco operated various metal-smelting plants at its site in El Paso (the "Former Asarco Site"), which is located just east of the USIBWC Site. Defs.' Ex. 51 § 2.1–.2; *see id.* fig.2-1. In 2005, Asarco declared Chapter 11 bankruptcy in the Southern District of Texas. *Id.* § 2.2. During bankruptcy proceedings, the United States (the "Government") filed a proof of claim on behalf of the USIBWC to resolve Asarco's joint-and-several CERCLA liability for "[r]esponse costs [that] have been and will be incurred by EPA at [the USIBWC Site] not inconsistent with the National Contingency Plan." Pl.'s Ex. 9, ¶ 1; *see id.* ¶ 194. In a settlement agreement approved by both the bankruptcy court and the district court, Asarco agreed to settle the claim—originally for twenty-seven million dollars—for nineteen million dollars. Parties' Stip. Facts ¶¶ 26–32. Asarco eventually paid the Government

over twenty-two million dollars to resolve its liabilities in full, including interest. *Id.* ¶ 31; Trial Tr. vol. I, at 34; *see* Defs.' Ex. 31, at 9–10.

Remediation of the USIBWC Site has not yet occurred, nor have bids been issued for the work. Trial Tr. vol. I, at 184. It is thus unclear whether Asarco's settlement amount will be sufficient to pay for full remediation of the Site. The testimony of Gilbert Anaya, the supervisor of the USIBWC's Environmental Management Division, was not clear on this point: while he first stated that he did not know whether the funds from Asarco would pay for one hundred percent of the remediation of the Canal and Dam, *id.* at 179, he later stated that they would be enough, *id.* at 182. The Court thus determines that it does not have sufficient evidence to make a conclusive finding of fact on this issue.

3. CEMEX

Defendant CEMEX, Inc. is a Louisiana corporation; Defendant CEMEX Construction Materials South, LLC ("CEMEX Construction") is a limited liability company organized under the laws of the state of

Delaware.[4] Parties' Stip. Facts ¶¶ 4, 19. CEMEX, Inc. is a successor in interest to Southwestern Portland Cement Company ("SWPCC"). *Id.* ¶ 6. SWPCC built and operated a cement plant (the "Plant") in El Paso from 1910 to 1985 and owned the property on which the Plant sits until 1991, when it merged into Southdown, Inc. ("Southdown"). *Id.* ¶¶ 7–10. Southdown sold the Plant to Industrial Trading, Inc. in 1998. Pl.'s Ex. 195. Three years later, in 2001, Southdown changed its name to CEMEX, Inc. Parties' Stip. Facts ¶ 5; Defs.' Proposed Findings Fact & Conclusions Law ¶ 5, Aug. 30, 2013, ECF No. 208 [hereinafter "Defs.' Proposed Findings & Conclusions"].

SWPCC also owned and operated a limestone quarry called the Toro Quarry (the "Quarry") until 1986. Parties' Stip. Facts ¶¶ 7, 11. The Quarry was later purchased by Jobe Concrete Products, Inc. ("JCPI"), which mined sand and gravel and operated ready-mix concrete batch operations on the property. *Id.* ¶¶ 12–13. Additionally, JCPI leased a portion of the Plant property from 1994 to 1996. Trial. Tr. vol. II, at 11. CEMEX Construction is a successor in interest to JCPI and

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[4] The Court will refer to both Defendants collectively as "CEMEX." When it is important for a Defendant to be identified individually, the Court will refer to it as "CEMEX, Inc." or "CEMEX Construction," as appropriate.

currently operates a ready-mix concrete batch plant at the Quarry. Parties' Stip. Facts ¶¶ 20–21; *see id.* ¶¶ 14–18.

Both the Quarry and the Plant, collectively known as the "CEMEX Site," are located approximately a quarter mile from the northern boundary of the USIBWC Site, to the east of the Rio Grande and immediately north of Asarco's property.

Asarco alleges that operations at the CEMEX Site contributed arsenic to the contamination at the USIBWC Site, and thus that CEMEX is responsible for a portion of the settlement amount paid by Asarco to the Government. First Am. Compl. ¶ 14, Mar. 22, 2013, ECF No. 50. Specifically, Asarco brings this CERCLA contribution claim against CEMEX for eleven million dollars, which it alleges constitutes CEMEX's share of the cleanup costs at the USIBWC Site. Pl.'s Post-Trial Br. Supp. Damages & Allocation 28, Aug. 30, 2013, ECF No. 207.

B. Contamination

1. Contamination at the CEMEX Site

a. The Quarry

CEMEX and its predecessors in interest, including SWPCC and JCPI, have quarried limestone at the Quarry since approximately 1910.

Trial Tr. vol. III, at 64 (testimony of Kimberly Dennis). The parties agree that limestone contains arsenic, *e.g.*, *id.* at 84, and CEMEX's designated representative, Kimberly Dennis, acknowledged that the Quarry contains both lead and arsenic, *id.* In addition, CEMEX concedes that the quarrying process and related activities, such as transportation, can result in fugitive emissions that contain arsenic. *Id.* at 82–83; Trial Tr. vol. V, at 111–12 (testimony of Dr. Theresa Bowers); *see also* Pl.'s Ex. 55, at P-55-4 ("The rock crusher facility onsite currently has a notice of violation for fugitive dust emissions.").

The parties' disputes with respect to the Quarry center on two issues of fact: (1) whether emissions from the Quarry contain an appreciable amount of arsenic, such that the emissions could have contributed to the contamination at the USIBWC Site, and (2) whether water—either surface or ground—flows from the Quarry to the USIBWC Site, such that it may have transported contaminants to the Site.

Several environmental assessments conducted at the Quarry note various materials that may have been dumped on the site, including

piles of dust, some of which may be cement kiln dust ("CKD").[5] For example, a 1992 Phase I Environmental Assessment of the Quarry performed by Raba-Kistner Consultants, Inc. ("Raba-Kistner") for JCPI noted the presence of approximately 1000 cubic yards of "[a] light yellow, powdery material which appeared to be cement kiln dust" in an arroyo at the Quarry. Pl.'s Ex. 36, at P-36-10. Similarly, a 1989 environmental assessment of the Quarry, also performed by Raba-Kistner, identified "several piles of material . . . which appear[ed] to be kiln dust, along with an unidentified black ash and an unidentified black asphaltic type material" located in the Quarry. Pl.'s Ex. 55, at P-55-5. Each report notes that runoff from kiln dust "can be hazardous due to its high alkalinity." *Id.*; Pl.'s Ex. 36, at P-36-10 ("This material could generate high pH runoff."). The 1992 report does not prioritize cleaning up the potential CKD, since the dust pile "is located in the high part of [the] arroyo, which apparently does not receive significant amounts of runoff." Pl.'s Ex. 36, at P-36-10, P-36-13. On the other

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[5] CKD is the particulate matter created during the cement-making process. Trial Tr. vol. IV, at 42, 44 (testimony of Dr. Michael Ketterer). If CKD is not captured by pollution-control equipment, it is generally dispersed into the environment via air emissions. *Id.*

hand, the 1989 report recommends that JCPI, the then-owner of the Quarry, dispose of the dust "at an authorized waste disposal facility to prevent leachate runoff." Pl.'s Ex. 55, at P-55-5, P-55-6. Neither Dennis nor Stanley Jobe, the owner of JCPI, recalled any actions taken to remove these materials. Trial Tr. vol. II, at 75–81 (testimony of Stanley Jobe); Trial Tr. vol. III, at 102–04.

CEMEX's expert witnesses on air emissions and soil contamination both testified that fugitive emissions from the Quarry were not responsible for any contamination of the USIBWC Site. Dr. John Richards, CEMEX's air-emissions expert, testified that while he had not tested the materials at the Quarry, he believed that any emissions from the Quarry would be "too small to be relevant." Trial Tr. vol. V, at 43–44. Similarly, he stated in his report that, "[b]ased on [his] experience in testing unpaved roads, limestone crushers, and storage piles," emissions from the Quarry "are not credible contributors" to the arsenic levels at the USIBWC Site. Defs.' Ex. 49, at 3. Dr. Theresa Bowers, CEMEX's soil-contamination expert, testified that fugitive emissions from the Quarry would contain arsenic

concentrations well within natural-background levels.[6] Trial Tr. vol. V, at 108, 111–12, 140. As a result, Bowers concluded that any emissions that traveled off the property "[would] not increase the concentration of arsenic in soil on the Asarco or IBWC properties." Defs.' Ex. 45, at 7. Asarco, on the other hand, did not provide evidence of the extent or the content of any fugitive emissions from the Quarry. *See* Trial Tr. vol. IV, at 87–88 (testimony of Dr. Michael Ketterer, explaining that he is not rendering any expert opinions as to the Quarry); *id.* at 181–82, 217 (testimony of Kenneth Ames, explaining the same).

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[6] Low levels of arsenic occur naturally in the environment and are referred to as "background" or the "geochemical baseline." Trial Tr. vol. V, at 100–01 (testimony of Bowers). Background can range quite a bit: while the Texas Commission on Environmental Quality sets the median background concentration of arsenic in Texas soil at 5.9 mg/kg, 30 Tex. Admin. Code § 350.51(m) (2007) (Tex. Comm'n on Envtl. Quality, Texas-Specific Soil Background Concentrations), naturally occurring arsenic concentrations in Texas soils have been documented up to 18 mg/kg, Defs.' Ex. 47, at 12. Background concentrations of arsenic in the soil at the USIBWC Site appear to be about 10 mg/kg or less. Trial Tr. vol. IV, at 91 (testimony of Ketterer). Although the parties occasionally reference a 2002 memorandum prepared for Asarco by Hydrometrics, Inc. that states that the "typical background concentration for arsenic in [Texas] soil ranges from 6 to 80 mg/kg," Defs.' Ex. 57, at 4; *see* Trial Tr. vol. V, at 101 (discussed by Bowers), no source is provided for this statement, nor has it otherwise been verified. The Court concludes that the approximate natural-background concentration of arsenic in the soil at the USIBWC Site is 10 mg/kg or less.

Soil samples taken at the Quarry exhibited maximum arsenic concentrations of 39 mg/kg in 2002 and 22.3 mg/kg in 2012. Defs.' Ex. 45, at 4; Defs.' Ex. 47, at 11–12. Bowers testified that these numbers reflect "natural background levels of arsenic." Trial Tr. vol. V, at 111–12.

Asarco did provide some evidence indicating that surface-water runoff from the Quarry may end up in the Rio Grande: Anaya testified that, from his own personal knowledge, there are arroyos on the Quarry property that would channel surface water toward the river. Trial Tr. vol. I, at 162. Additionally, the 1981 environmental assessment of the Quarry acknowledges the possibility of off-site surface-water runoff, although it does not specify where such runoff might go. *See* Pl.'s Ex. 55, at P-55-5–P-55-6. Similarly, Dennis testified that water containing harmful materials could run off the property. Trial Tr. vol. III, at 86, 103–04.

The 1992 environmental assessment of the Quarry notes that, while surface water on the property generally drains toward the southwest, quarrying activities "have substantially altered the terrain in some areas." Pl.'s Ex. 36, at P-36-7. Indeed, it appears from the reports provided that at least some of the surface water on the property flows into Cement Lake, an unlined retention pond located in the northwest portion of the Quarry. *See* Trial Tr. vol. III, at 58; Pl.'s Ex. 55, at P-55-4, P-55-7. The 1992 assessment reports that no offsite discharge occurs from Cement Lake. Pl.'s Ex. 55, at P-55-4.

CEMEX's groundwater expert, Mark Hemingway, testified that, to a reasonable degree of scientific certainty, the Quarry is not a source of groundwater contamination at the USIBWC Site. Trial Tr. vol. V, at 173, 196. Groundwater at the Quarry, he testified, shows no signs of elevated arsenic content: rather, testing in the Quarry has identified arsenic levels consistent with natural-background levels, not contamination. *Id.* at 172, 185. In addition, he testified to the lack of evidence of any direct migration pathway between the Quarry and the USIBWC Site. *Id.* at 185, 190. His testimony indicated that the groundwater beneath the Quarry travels in a "separate, distinct path" along Executive Drive to the Rio Grande. *Id.* at 194–95; Defs.' Ex. 47, fig.3. As a result, he concludes, even were "arsenic-impacted groundwater" present on the Quarry, "it would not migrate to" the USIBWC Site. Defs.' Ex. 47, at 3. Asarco presented no evidence otherwise: while its surface-water expert, Kenneth Ames, testified about the groundwater at and around the American Dam and Canal, he rendered no opinions as to the groundwater beneath the Quarry. *See* Trial Tr. vol. IV, at 181–82, 217.

b. The Plant

The Plant is a dry-process plant that SWPCC used to produce cement from approximately 1910 to 1985. *See* Trial Tr. vol. III, at 68–69. The Plant was built with two kilns; two more were added at a later date. While the kilns' precise dates of operation are unclear, the amount of cement produced at the Plant suggests that some of the kilns ran continuously during the whole seventy-five-year period that the Plant was in service. *Id.* at 75, 106, 119.

Much of Asarco's case is based on information found in a 1989 "Environmental Site Inspection" conducted by Raba-Kistner (hereinafter the "Report") on behalf of Stanley Jobe, who at that time was considering purchasing the Plant property. Trial Tr. vol. II, at 52; *see* Pl.'s Ex. 52. Asarco characterizes the Report as a smoking gun, while CEMEX insists it is the result of a cursory "look-see" from which no concrete conclusions can be drawn. *Compare* Trial Tr. vol. II, at 164, *with id.* at 94–95.[7]

[7] The parties agree that the Report is not the result of a comprehensive Phase I Environmental Assessment, and the Report itself notes that it is the result of a "general initial survey." Pl.'s Ex. 52, at P-52-12. In addition, the Report begins with qualifying language: "This study was conducted for Mr. Stanley Jobe for the

The Report details heavy dust accumulation throughout the Plant property, including inside the administration office building, precipitator building, baghouses, and raw grinding facility. Pl.'s Ex. 52, at P-52-5–P-52-8. It notes that "[a]n accumulation of kiln dust and cement powder product exists in all levels" of the raw clinker building, rotary kilns, and clinker pits, and concludes that "[m]uch of the work area has a significant accumulation of kiln dust that originated from the processes of cement production." *Id.* at P-52-8–P-52-9.

Raba-Kistner did not test the "kiln dust" for arsenic, nor did it confirm through testing that the dust was indeed CKD rather than other, potentially less hazardous, dust byproducts of the cement-making process. The Report notes, "Some types of dust from cement production processes may potentially cause runoff waters and effluents to become very basic . . . . In all cases, the dust is a potential health hazard due to fugitive particulate matter . . . ." *Id.* at P-52-10. It recommends analyzing stormwater runoff from the property "due to the close

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above stated purposes and may not contain sufficient information for other purposes or parties." *Id.* at P-52-3. The "above stated purposes" include "[i]dentify[ing] potential environmental hazards associated with the kiln dust located throughout the facility." *Id.*

proximity of the Rio Grande" and cautions that "[t]he potential legal liabilities associated with ownership of [the] property [would] be formidable if groundwater and/or surface water are found to have been impacted." *Id.* at P-52-13. However, it ultimately concludes that "[t]he risk of stormwater runoff contamination and/or groundwater contamination from the kiln dust deposited on the site cannot be determined at this point." *Id.*

Stanley Jobe, who commissioned the Report, leased portions of the Plant property from 1994 to 1996 and began preliminary efforts to purchase the property in 1996 and again in 1998. Trial Tr. vol. II, at 16. While Jobe had difficulty recalling the conditions of the Plant at the time of JCPI's leasehold, he did testify that "cement dust or some kind of dust" was present on parts of the property and recalled that "there could have been two feet" of dust accumulated in some places. *Id.* at 18, 89–90. Additionally, the evidence provided to the Court indicates that Jobe did not purchase the Plant property partly because of the potential environmental liability at the site: he testified that his decision rested in part on environmental concerns and in part on the then-owner's failure to perform demolitions as promised. *Id.* at 83, 88; *see* Pl.'s Ex. 56

("[T]here is tremendous liability in the property."). He also testified that he knew some environmental conditions at the Plant were "terrible" and that he was aware of "extensive contamination" on the property. Trial Tr. vol. II, at 49–51.

The parties' experts agree that CKD contains arsenic. *See* Trial Tr. vol. IV, at 58; Trial Tr. vol. V, at 67.[8] They dispute, however, whether the dust characterized by Raba-Kistner as kiln dust was actually CKD. Richards, CEMEX's air-emissions expert, testified that CKD is very difficult to visually identify, even for people working in the cement industry. Trial Tr. vol. V, at 14. On the other hand, he noted that "it would be very reasonable to expect some CKD inside a building at a cement plant." *Id.* at 15. Richards also testified that CKD would likely not be left unused at a cement plant: rather, because CKD can be recycled back into the cement-producing process, it is a "valuable material" that most plants make efforts not to waste. *Id.* at 16–17. He

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[8] The concentration of arsenic in CKD depends on the materials used in the cement-making process, including the arsenic content of the limestone; the arsenic content of additives, including recycled CKD, fly ash, and clay; and the arsenic content of the fuel source used to fire the kiln. *See* Trial Tr. vol. III, at 69–71 (testimony of Dennis); Trial Tr. vol. IV, at 42–44 (testimony of Ketterer). While the parties vigorously contest what fuel source was used at the Plant, *compare* Trial Tr. vol. IV, at 60–62, 105, *with* Trial Tr. vol. V, at 23–24, the Court finds that it has insufficient evidence to make a conclusive finding on the subject.

also noted, however, that some CKD cannot be recycled because of characteristics like high alkalinity, *id.* at 17, 90, and admitted that he was not familiar with the process used at the Plant or the specific characteristics of the limestone used there, *id.* at 90–91. Dennis, CEMEX's designated representative, testified that not all CKD produced at a cement plant could be recycled, and that nonrecycled CKD must be managed and treated as waste. Trial Tr. vol. III, at 77–78. Similarly, an EPA report provided by Asarco, and relied upon by Ketterer and Ames, estimates that approximately 35% percent of CKD generated is discarded as waste. Pl.'s Ex. 128, at P-128-10; *see* Pl.'s Ex. 127, at P-127-4.

Ketterer, Asarco's air-emissions expert, agreed that dust, as a general matter, cannot be visually identified as CKD; however, Ketterer maintained that some of the material on the Plant property was CKD, likely deposited on the property by emissions from the Plant. Trial Tr. vol. IV, at 48, 86. He noted that some of the Report's test results suggested that Raba-Kistner had tested the kiln dust and that these results indicate that the dust was in fact CKD: for example, a sample collected from one of the baghouse precipitators—a control device

designed to capture CKD—exhibited chemical properties consistent with CKD, including elevated pH, concentrations of chloride and sulfate, and elevated concentrations of lead and cadmium. *Id.* at 64–67; *id.* at 180 (Ames agrees with Ketterer's analysis on this point); *see* Pl.'s Ex. 52, at P-52-18–P-52-19. Despite Richard's testimony that this sample's profile is not "entirely consistent" with CKD, Trial Tr. vol. V, at 95, the Court credits Ketterer's testimony on this point.

The parties further disagree about the possible concentrations of arsenic found in the CKD at the Plant. Both of Asarco's experts, Ketterer and Ames, relied on the average arsenic content of CKD identified in a 1993 EPA report to Congress: 24 mg/kg.[9] *See* Trial Tr. vol. IV, at 74, 106, 134; Pl.'s Ex. 127, at P-127-8. Ames concluded, based on industry data and limited information about the Plant's actual emissions, that more than 40,000 pounds of arsenic were produced in the Plant's seventy-five years of operation. Trial Tr. vol. IV, at 147; Pl.'s Ex. 158, at P-158-6. Richards, on the other hand, used an estimate of

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[9] The EPA report to Congress measures arsenic concentrations in soil in parts per million, or ppm. For purposes of simplicity, however, the Court will refer to all measurements in units of mg/kg. Because ppm in this context is computed on a mass-to-mass ratio, ppm and mg/kg are identical, that is, because a kilogram is one million milligrams, one milligram per kilogram is one part per million.

18 mg/kg, the average arsenic level in CKD according to the Portland Cement Association. Defs.' Ex. 49, at 5. He testified that this estimate is "a more reliable calculation of the set of data" found in the EPA report. Trial Tr. vol. V, at 45. Richards concluded, based on similarly generic statistics, that a maximum of approximately 29,000 pounds of arsenic were produced. Defs.' Ex. 49, at 6.

Whether or not arsenic, in whatever amount, traveled from the Plant to the USIBWC Site is another point of contention between the parties. While Richards testified to the likely use of mechanisms to contain CKD in the actual cement-production process, *see* Trial Tr. vol. V, at 21–31, neither Jobe nor Dennis knew of any controls to prevent runoff or fugitive emissions from CKD once deposited on the property, Trial Tr. vol. II, at 30; Trial Tr. vol. III, at 85–87, nor did either know what had happened to the dust on the property referenced in the 1989 Report, Trial Tr. vol. II, at 79–81; Trial Tr. vol. III, at 115. It is clear that some CKD, like that inside covered buildings and some that had developed a hard crust, was not susceptible to being carried off by surface water or wind. *See* Trial Tr. vol. II, at 113–14 (testimony of Dennis); Trial Tr. vol. IV, at 188–89, 222 (testimony of Ames). On the

other hand, much of the CKD remained susceptible to these forces, as referenced in the Report's recommendations. Pl.'s Ex. 52, at P-52-9–P-52-10.

It is generally not disputed that surface water on the Plant property drains toward the west and southwest, that is, toward the Rio Grande. Trial Tr. vol. II, at 22–23 (testimony of Jobe); *see* Defs.' Ex. 47, fig.3 (map of area arroyos and groundwater flow[10]). Based on his personal observations, Ames testified that the tip of the Plant, located in the southwestern corner of the property, is the collection point for water running off the property. Trial Tr. vol. IV, at 137. His expert opinion is that the CKD and other dust on the Plant property was transported via surface-water runoff down the property, into concrete-lined culverts under Paisano Drive, and into the Rio Grande. *Id.* at 152–54. Hemingway, CEMEX's water expert, generally agreed that surface water on the Plant property would drain along this path. Trial Tr. vol. V, at 167–68; *see* Defs.' Ex. 47, fig.3 (surface water would run into Arroyo C and then down to the Rio Grande). He qualified this

[10] Experts from both parties agree that surface water and groundwater tend to flow along the "preferential pathways" of arroyos, primarily because of the arroyos' elevation and permeability. *See* Defs.' Ex. 47, at 7.

opinion, however, by testifying that a number of other runoff sources would contribute to the flow of water into the Rio Grande, including water from other industrial sources and the La Calavera residential area, which has shown signs of lead and arsenic contamination. Trial Tr. vol. V, at 168–69; *see also* Trial Tr. vol. IV, at 216 (testimony of Ames acknowledging the contamination at La Calavera). Any additional runoff sources, testified Hemingway, would substantially dilute the runoff from the Plant, "probably by orders of magnitude." Trial Tr. vol. V, at 169.

Any CKD that was transported to the Rio Grande by runoff would flow down the river toward the American Dam and Canal. Trial Tr. vol. IV, at 156–57. When the Dam's gates are closed, water builds up in a settling basin just upstream of the Dam. Trial Tr. vol. I, 185–86; Defs.' Ex. 20, App. K.2, at 20–21. The settling basin and Dam slow the velocity of the river considerably, resulting in the deposition of sediment in the basin. Defs.' Ex. 20, App. K.2, at 20. After reaching a certain volume, water begins to flow over a skimming weir, located at a ninety-degree angle to the Dam, and enters the Canal through its headgate

structure.[11] Trial Tr. vol. I, at 185; Trial Tr. vol. IV, at 197; Defs.' Ex. 20, App K.2, at 21.[12] The weir is designed to prevent heavier sediment from entering the Canal. *See* Defs.' Ex. 20, App. K.2, at 20 ("The purpose of the skimming weirs is to prevent, insofar as possible, the entrance of heavier sands and silts into the canal by diverting in each case, only the 'top layer' of water." (quoting W.F. Resch, U.S. Dep't of the Interior, *Report on Mexican Canal Diversion—Rio Grande Project* 27–28 (1934))). Once the Dam reaches capacity, it opens automatically, allowing water to continue traveling along the river. *Id.*

According to Ames, some water carrying CKD sediment from the Plant would flow into the Canal, while much of the sediment would be deposited just upstream of the Dam. Halted just before the Dam, this sediment would then leach arsenic into the surface water of the river

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[11] The record contains several references to a second skimming weir in addition to the long weir located perpendicular to the Dam. *See* Trial Tr. vol. I, at 187 (quoting Defs.' Ex. 20, App. K.2, at 19), 191; Trial Tr. vol. IV, at 198. However, the Court has been unable to confirm that a second skimming weir indeed exists. The quote that mentions the second weir, which appears to be the source of the statements in the record, comes from a report written in 1934, four years before the actual Dam and Canal were constructed. *See* Defs.' Ex. 20, App. K.2, at 18 (quoting W.F. Resch, U.S. Dep't of the Interior, *Report on Mexican Canal Diversion—Rio Grande Project* 27–28 (1934)). All present-day descriptions of the Dam discuss only one weir, and only one weir appears in the photographs in the record before the Court.

[12] For a photograph of the American Dam Field Office Property, Dam, skimming weir, and Canal headgates, see Pl.'s Ex. 25-8.

and Canal as well as the surrounding groundwater. Trial Tr. vol. IV, at 156–59. Both Ketterer and Ames discussed the propensity of arsenic in CKD to solubilize rapidly when in contact with water. *See id.* at 114, 174. In fact, Ketterer testified that it "is a scientific certainty" that CKD combined with water creates an alkaline solution that contains high concentrations of dissolved arsenic. *Id.* at 114. If arsenic were to leach from CKD sediment into the Rio Grande, upstream of the American Dam, the solution created would infiltrate both the surface water and the groundwater at the USIBWC Site, since the two systems are "in constant communication" with one another. *Id.* at 163–64; Pl.'s Ex. 158, at P-158-9; *cf.* Defs.' Ex. 47, at 7 (expert report of Hemingway, in which he states that groundwater "interact[s] with the river" in a variety of ways). Ames testified that the likelihood that arsenic from the Plant ended up in groundwater at the USIBWC Site is thus "very likely" and "very plausible." Trial Tr. vol. IV, at 192.

Ketterer also testified to the likelihood that fugitive emissions from the Plant could travel to the USIBWC Site and contaminate the soil there, stating that the data "allow the possibility that there is a CEMEX contribution to the air emissions observed in the soil." *Id.* at

99. Citing other CKD-contaminated sites around the country, Ketterer concluded that it would not be scientifically reasonable to say that the Plant did not contribute arsenic, via air emissions, to the USIBWC Site. *Id.* at 112. On the other hand, Bowers, CEMEX's soil-contamination expert, testified that the Plant "could not" be the source of soil contamination at the USIBWC Site. Trial Tr. vol. V, at 125. Rather, she testified that no trace of stack emissions from the Plant could be identified in the soil at the USIBWC Site. *Id.* at 108–09. In addition, she considers the levels of arsenic in CKD to be within the range of natural background,[13] meaning that any windblown CKD sediment could not create contamination. *Id.* at 125, 140–41.

2. The Former Asarco Smelter

Both Asarco experts admit that Asarco is a source of arsenic at the USIBWC Site. *See* Trial Tr. vol. IV, at 202–03, 210, 220 (testimony of Ames that Asarco had some arsenic impact on the groundwater at the USIBWC Site); Pl.'s Ex. 118, at P-118-3 (expert report of Ketterer in

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[13] Soil at the Plant property exhibited a maximum arsenic concentration of 36.2 mg/kg in 2012. Defs.' Ex. 45, at 4; Defs.' Ex. 47, at 12. As discussed above, the Court considers the background level of arsenic at the Site to be approximately 10 mg/kg or less. *See supra* n.6.

which he states that "the former Asarco smelter is a major source of arsenic contamination" in the soils at the USIBWC Site). Ketterer argues, however, that Asarco is not the only source of arsenic in the soil at the Site, *see* Trial Tr. vol. IV, at 99, while Ames opines that any arsenic in the groundwater found above the American Dam must be attributed to CEMEX, *id.* at 170.

Ketterer authored a report in 2006 for the Sierra Club in which he concluded that Asarco was the "dominant" source of hazardous substances, including arsenic and lead, in area soils. *Id.* at 10. Phrased differently, Ketterer concluded that Asarco was responsible for at least 50% of the arsenic in the soil. *Id.* at 97. Bowers, CEMEX's soil-contamination expert, relied on data from the Sierra Club study to conclude that Asarco's operations are responsible for all of the soil contamination at the USIBWC Site. This conclusion, she argues, is supported by two facts: first, that the concentrations of arsenic in the soil at the Site are much higher than any arsenic concentrations found at the Quarry or the Plant; and second, that the metal ratios in soil samples from the Site exhibit only two "fingerprints," one attributable

to slag emissions from Asarco,[14] and the other attributable to Asarco's stack emissions.[15] Trial Tr. vol. V, at 108–09. If emissions from the Plant impacted the Site, she testified, the data would contain a distinguishable third fingerprint: because it does not, she concludes that CEMEX's contribution to the contamination is insignificant, if present at all. *Id.* at 112; Defs.' Ex. 45, at 8.

In rebuttal, both Ames and Ketterer testified to the presence of arsenic emissions from the Plant in the soil at the USIBWC Site. Analysis of the Sierra Club data conducted by Ames led him to conclude that, while Asarco accounts for the majority of metals contamination at the Site, more than one anthropogenic source of arsenic is needed to account for the data. *See* Pl.'s Ex. 157, at P-157-9, P-157-11 (explaining that one factor, likely from Asarco, can account for 78.8% of the elevated concentrations of metals, including arsenic, but that the second and third largest factors, which account for 16.4% and 2.8% of the elevated concentrations, respectively, "strongly suggest" one or more additional

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[14] Slag is a byproduct of the copper-smelting process and comprises a melted, hardened remnant of the nonmetallic portion of copper ore. Defs.' Ex. 47, at 8.

[15] Because arsenic has only one stable isotope, isotopic analysis cannot be used to directly fingerprint different sources of arsenic in the environment. Trial Tr. vol. IV, at 18–19 (testimony of Ketterer).

sources of arsenic in the soil). Ketterer, who conducted the original Sierra Club study, testified that the data does not exclude the possibility that CEMEX also contributed arsenic to the soil at the USIBWC Site. Trial Tr. vol. IV, at 99. Rather, he opined, "it's a certainty that the [C]ement [P]lant is a source of arsenic released into the environment" via both stack emissions and windblown CKD emissions. *Id.* at 59.

Richards, CEMEX's air-emissions expert, used generic industry statistics and limited data from the Plant and Smelter to estimate the two sources' relative air emissions. Trial Tr. vol. V, at 35–36, 49–50. He concluded that Asarco's emissions were at least 5000 times those of CEMEX. *Id.* at 38. Asarco's experts noted, however, that the height of the Asarco stacks led to the distribution of Asarco's emissions over an extremely wide area, spreading to Juarez, Chihuahua, Mexico and Anapra, New Mexico. Trial Tr. vol. IV, at 97, 235. They argue that the short height of the Plant stacks, on the other hand, means that its emissions settled on the CEMEX Site and the immediately surrounding area, including the USIBWC Site. *See id.* at 48, 235.

Ames, Asarco's water expert, testified that all of the groundwater contamination upstream of the American Dam was caused by CEMEX. As evidence, Ames discussed testing conducted by Malcolm Pirnie, Inc. ("Malcolm Pirnie") at well EP-80, located immediately upgradient of the Dam. *Id.* at 164–65. Tests done at the well in 2009 found an arsenic value of 0.025 mg/L, two and a half times the EPA standard for arsenic in drinking water, which is 0.01 mg/L. *Id.* at 169–70. Ames testified that it would not be realistic to conclude that any source other than runoff from the Plant would cause such a high concentration of arsenic to be observed at the well. *Id.* at 170.

On the other hand, CEMEX's groundwater expert, Hemingway, testified that this concentration of arsenic is consistent with the well's location at the edge of Asarco's groundwater arsenic plume. Trial Tr. vol. V, at 193; Defs.' Ex. 47, fig.4. Referencing a groundwater map created by Malcolm Pirnie in 2006, Hemingway explained that concentrations of arsenic steadily decline as you get closer to the Rio Grande and farther away from the areas of highest arsenic concentration on the former Asarco property. Trial Tr. vol. V, at 186–87. If there were another source of arsenic in the groundwater, he

testified, "then groundwater impact would extend beyond the areas of Asarco's activities, and exhibit a pattern of increase in the direction of" the additional source. Defs.' Ex. 47, at 15. Because no such increase occurs, it is not reasonable to suggest that any source other than Asarco contributed arsenic to the groundwater at the Site. Trial Tr. vol. V, at 186–87, 197. Finally, Hemingway testified that arsenic leaching from slag buried at the Parker Brothers arroyo, part of the former Asarco facility, contributed arsenic to the groundwater located upstream of the Dam. *Id.* at 180–82.

Both Asarco experts emphasize the difference in the leachability of slag and the leachability of CKD. For example, Ames testified that the potential for arsenic to leach into the environment from the materials is like "night and day": while slag's impact is negligible, the potential for arsenic to leach "at a rapid rate" from a powder—particularly into an alkaline solution—is "very high." Trial Tr. vol. IV, at 174; *see also id.* at 114–17 (testimony of Ketterer explaining the impact of pH on the solubility of arsenic). As a result, Ames testified, slag from the Parker Brothers arroyo did not contribute arsenic to the

groundwater even though groundwater from the arroyo travels north of the Dam. *Id.* at 173–74.

Data obtained from the "Final Remedial Action Work Plan" conducted for the former Asarco smelter by Malcolm Pirnie in 2011, undermines both parties' groundwater-related assertions. Rather, the Malcolm Pirnie report makes clear that, no matter the rate at which arsenic leaches from slag, slag on the former Asarco property has contributed significant amounts of arsenic to the groundwater at the property and at the USIBWC Site. *See* Defs.' Ex. 51, at ES-3 (describing groundwater at Parker Brothers arroyo); *id.* § 2-5 ("Elevated concentrations of arsenic, which is the primary groundwater [contaminant of concern], occur over a large area which extends from the former facility to the Rio Grande floodplain . . . ."). However, the report also makes clear that the majority of Asarco's contribution to arsenic in groundwater—from slag and other sources, such as the former acid plant—affects the USIBWC Site downgradient of the American Dam. *See id.* § 2-5; *see also* Defs.' Ex. 35, §§ 3-9, 5-5. Even groundwater from the Parker Brothers arroyo, according to the report, discharges "along a short section of the Rio Grande downgradient of the

American Dam." Defs.' Ex. 51, § 2-5; *accord id.* ("[T]he American Dam . . . induces groundwater to discharge downstream of the dam due to the increased water level upstream."). In addition, the Phase IV Remedial Investigation Report conducted for Asarco by Asarco Consulting, Inc. in 2003 concluded that "[t]he arsenic concentration gradient characterized by monitoring wells suggests that the source of arsenic in groundwater is downgradient from EP-83." Defs.' Ex. 35, § 5-5. While the map provided is difficult to decipher, the Court believes that Well EP-83 is located on the east side of Paisano Drive and connects to an arroyo that discharges into the river at a site parallel to the Dam. *Id.* Exs. 3, 6; *see also* Defs.' Ex. 47, fig.3 (arroyo map in Hemingway's expert report). Thus, these sources suggest that arsenic in groundwater upgradient of the American Dam may not be caused by Asarco.

II. CONCLUSIONS OF LAW

A. CERCLA Liability

CERCLA was enacted in 1980 as a broad, remedial response to environmental harm. *See Amoco Oil Co. v. Borden, Inc.*, 889 F.2d 664, 667 (5th Cir. 1989). The statute encourages timely response to environmental hazards and shifts the costs of that response from

taxpayers to the companies and industries responsible for the hazard. *See Control Data Corp. v. S.C.S.C. Corp.*, 53 F.3d 930, 935–36 (8th Cir. 1995). As such, courts agree that CERCLA should be construed liberally to effectively implement its goals. *United States v. Alcan Aluminum Corp. (Alcan I)*, 964 F.2d 252, 258 (3d Cir. 1992) (citing *B.F. Goodrich v. Murtha*, 958 F.2d 1192, 1197 (2d Cir. 1992); *Dedham Water Co. v. Cumberland Farms Dairy, Inc.*, 889 F.2d 1146, 1150 (1st Cir. 1989)).

Unfortunately, courts also agree that CERCLA, a hastily enacted legislative compromise, is poorly drafted, ambiguous, and difficult to interpret. *Amoco Oil*, 889 F.2d at 667 ("[B]ecause [CERCLA] was enacted as a 'last-minute compromise' between three competing bills, it has 'acquired a well-deserved notoriety for vaguely drafted provisions and an indefinite, if not contradictory, legislative history.'" (quoting *United States v. Mottolo*, 605 F. Supp. 898, 902, 905 (D.N.H. 1985))).[16]

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[16] Other courts have called CERCLA a "legislative nightmare," *Rhodes v. County of Darlington, S.C.*, 833 F. Supp. 1163, 1190 n.18 (D.S.C. 1992), with a "legislative history [that] is unusually riddled by self-serving and contradictory statements," *United States v. Wade*, 577 F. Supp. 1326, 1331 (E.D. Penn. 1983). The Ninth Circuit recently suggested that CERCLA's "baffling language" might have been prevented had the court been present, along "with a red pen and a copy of Strunk &

Much of the confusion stems from "the ambiguous and even cryptic text" of § 107(a), which sets forth CERCLA's basic standards for liability. Susan M. Cooke, The Law of Hazardous Waste § 14.01[1] (2013 ed.). Section 107(a) reads as follows:

> Notwithstanding any other provision or rule of law, and subject only to the defenses set forth in subsection (b) of this section—
>
> (1) the owner and operator of a vessel or a facility,
>
> (2) any person[17] who at the time of disposal of any hazardous substance owned or operated any facility at which such hazardous substances were disposed of,
>
> (3) any person who by contract, agreement, or otherwise arranged for disposal or treatment, or arranged with a transporter for transport for disposal or treatment, of hazardous substances owned or possessed by such person, by any other party or entity, at any facility or incineration vessel owned or operated by another party or entity and containing such hazardous substances, and
>
> (4) any person who accepts or accepted any hazardous substances for transport to disposal or treatment facilities,

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White's *Elements of Style*," at the time of the statute's drafting. *Carson Harbor Vill., Ltd. v. Unocal Corp.*, 270 F.3d 863, 883 (9th Cir. 2001).

[17] CERCLA defines "person" as "an individual, firm, corporation, association, partnership, consortium, joint venture, commercial entity, United States Government, State, municipality, commission, political subdivision of a State, or any interstate body." 42 U.S.C. § 9601(21) (2006). The parties in this case agree that CEMEX is a person pursuant to this definition. Parties' Stip. Facts ¶¶ 23–24, July 25, 2013, ECF No. 169.

incineration vessels or sites selected by such person,[18] from which there is a release, or a threatened release which causes the incurrence of response costs,[19] of a hazardous substance, shall be liable for—

(A) all costs of removal or remedial action incurred by the United States Government or a State or an Indian tribe not inconsistent with the national contingency plan;

(B) any other necessary costs of response incurred by any other person consistent with the national contingency plan;

(C) damages for injury to, destruction of, or loss of natural resources, including the reasonable costs of assessing

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[18] The layout of § 107(a) suggests that the phrase beginning "from which there is a release" modifies only paragraph (4) of subsection (a). Courts have uniformly held, however, that the statute's codified form is the result of a scrivener's error and that the phrase modifies paragraphs (1) through (4). *Control Data Corp. v. S.C.S.C. Corp.*, 53 F.3d 930, 934 n.7 (8th Cir. 1995) (citing *New York v. Shore Realty Corp.*, 759 F.2d 1032, 1043 n.16 (2d Cir. 1985) (discussing legislative history)). The Court agrees that, properly understood, paragraph (4) should end with "selected by such person," and the phrase "from which there is a release, or a threatened release which causes the incurrence of response costs, of a hazardous substance" should begin on a new line.

[19] A further sign of CERCLA's shoddy drafting, the phrase "from which there is a release . . ." omits a comma after "threatened release"—suggesting that the clause is restrictive—while simultaneously using the word "which"—suggesting that the clause is nonrestrictive. That is, the missing comma implies that a person can be held liable for an actual release even when that release does not "cause the incurrence of response costs," while the word "which" suggests just the opposite. Because the Fifth Circuit has applied this causation requirement to both releases and threatened releases, *see Amoco Oil Co. v. Borden, Inc.*, 889 F.2d 664, 668 (5th Cir. 1989), the Court will proceed on the assumption that a person can be held liable for an actual release only when that release causes the incurrence of response costs. *Cf. Control Data,*53 F.3d at 935 n.8; *Shore Realty*, 759 F.2d at 1044 n.18; *Rhodes*, 833 F. Supp. at 1190 n.18.

> such injury, destruction, or loss resulting from such a release; and
>
> (D) the costs of any health assessment or health effects study carried out under section 9604(i) of this title.

42 U.S.C. § 9607(a) (2006).

Asarco brings this claim against CEMEX pursuant to § 113(f) of CERCLA, which allows "[a] person who has resolved its liability to the United States . . . for some or all of a response action or for some or all of the costs of such action in an administrative or judicially approved settlement" to seek contribution from other potentially responsible persons. *Id.* § 9613(f)(3)(B).[20] In order to prevail on a CERCLA contribution claim, a plaintiff must first demonstrate that a defendant is "liable or potentially liable" under § 107(a) of CERCLA. *Id.* Thus, for Asarco to prevail against CEMEX, it must first prove that (1) there was a release or threatened release of a hazardous substance from a facility for which CEMEX is a responsible person; and (2) the release or

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[20] It is undisputed in this case that Asarco has resolved its liability to the Government for the costs of the Government's response action at the USIBWC Site in a judicially approved settlement. Parties' Stip. Facts ¶¶ 3, 32.

threatened release caused the Government[21] to incur costs of removal or remedial action that are not inconsistent with the national contingency plan ("NCP"). *See id.* § 9607(a)(4)(A).

What these elements require is, for the most part, uncontroversial. CERCLA defines a "release" as "any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment." 42 U.S.C. § 9601(22). The release must be of a "hazardous substance," defined by CERCLA in reference to a number of other statutes and regulations. *Id.* § 9601(14). The release must also come "from a facility," which CERCLA defines as

> (A) any building, structure, installation, equipment, pipe or pipeline . . . , well, pit, pond, lagoon, impoundment, ditch, landfill, storage container, motor vehicle, rolling stock, or aircraft, or (B) any site or area where a hazardous substance

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[21] The Court notes, for purposes of clarity, that the party that must have incurred cleanup costs differs depending on the type of action a plaintiff pursues. For example, a plaintiff in a § 107(a) cost-recovery action must have incurred cleanup costs itself. *United States v. Atl. Research Corp.*, 551 U.S. 128, 139 (2007). Because Asarco brings this action pursuant to § 113(f)(3)(B), however, the party that must have incurred the cleanup costs is the Government, that is, the party with whom Asarco entered into a judicially approved settlement to resolve its CERCLA liability at the USIBWC Site. *See* 42 U.S.C. § 9613(f)(3)(B); Parties' Stip. Facts ¶ 32 ("The Site Settlement constitutes a judicially approved settlement, which stems from the enforcement action taken pursuant to Section 106 or Section 107 of CERCLA.").

> has been deposited, stored, disposed of, or placed, or otherwise come to be located.

Id. § 9601(9). A defendant must be a responsible person with respect to that facility, that is, a defendant must fall into one of the § 107(a) categories—current owners or operators, former owners or operators, arrangers, or transporters—with respect to the site of the release. *See id.* § 9607(a). In addition, the Government must have incurred removal and remedial costs that are not inconsistent with the NCP—a set of "procedures and standards for responding to releases of hazardous substances" that is promulgated by the EPA. *Amoco Oil*, 889 F.2d at 672 (quoting 42 U.S.C. § 9605(a)); *see* 40 C.F.R. § 300.700 (2013). Finally, the incurrence of these costs must have been "caused" by the release from the facility for which defendant is a responsible person. 42 U.S.C. § 9607(a).

1. The Applicable Causation Standard

What "caused" means in this context is unclear and vigorously contested by the parties. Courts agree that CERCLA imposes strict liability in traditional "one-site" cases. *See Alcan I*, 964 F.2d at 259

(citing 42 U.S.C. § 9601(32);[22] *Dedham Water*, 889 F.2d at 1150; *New York v. Shore Realty Corp.*, 759 F.2d 1032, 1042 (2d Cir. 1985)). The question before the Court is whether the same strict-liability framework applies in "two-site" cases such as this one.

In a one-site case, the site of the release or threatened release of a hazardous substance and the site where the Government has incurred cleanup costs are one and the same. In those cases, a plaintiff must prove (1) that the site in question is a "facility" pursuant to § 101(9); (2) that the defendant is a responsible person pursuant to § 107(a); (3) that a release or a threatened release of a hazardous substance has occurred; and (4) that the release or threatened release caused the Government to incur costs. *Amoco Oil*, 889 F.2d at 668. A plaintiff need not demonstrate that a particular *defendant* caused the Government to incur those costs, or even that the defendant caused the release that, in turn, caused the Government to incur costs. *Amoco Oil*, 889 F.2d at 670 n.8 ("[I]n cases involving multiple sources of contamination, a plaintiff

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[22] Section 101(32) of CERCLA defines "liability" in reference to § 311 of the Federal Water Pollution Control Act, 33 U.S.C. § 1321. Liability pursuant to the Federal Water Pollution Control Act is strict. *United States v. Dixie Carriers, Inc.*, 627 F.2d 736, 739 (5th Cir. 1980).

need not prove a specific causal link between costs incurred and an individual generator's waste."). Rather, a plaintiff must only prove that a *release* from a site for which the defendant is a responsible person caused the Government to incur costs. *Outlet City, Inc. v. W. Chem. Prods.*, 60 F. App'x 922, 926 (3d Cir. 2003) (citing *Alcan I*, 964 F.2d at 264–66) ("[T]he only causation required under CERCLA is that the release of hazardous substances at the 'facility' cause the response costs; a plaintiff does not need to prove that the defendant's waste caused the response costs under Section 107.").[23]

In a two-site case, the release or threatened release of a hazardous substance occurs at one site, and the Government incurs response costs at another. CEMEX relies heavily on court decisions that express concern that the application of strict liability in two-site cases would

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[23] *See also Tosco Corp. v. Koch Indus.*, 216 F.3d 886, 891 (10th Cir. 2000) ("To establish liability under § 9613(f), it is sufficient for the plaintiff to establish a connection between a particular defendant and the incurred response costs *vis à vis* the defendant's identification as a responsible person as defined in § 9607(a)." (citing cases)). *But see Bob's Beverage, Inc. v. Acme, Inc.*, 264 F.3d 692, 696 (6th Cir. 2001) (holding that plaintiffs failed to prove a cost-recovery cause of action where they did not "demonstrate that a release by the [defendants] affected [their] response costs"). John Hyson explains that the *Bob's Beverage* court mistakenly reached this holding by applying a statement from *Control Data* to a different, distinguishable context. John M. Hyson, *"Causation" in CERCLA Private Cost Recovery Actions*, *in Hazardous Substances, Site Remediation, and Enforcement* 59, 64 (Am. Law Inst. 2003).

result in unfair or absurd results. For example, the U.S. District Court for the Western District of Missouri has held that, "where . . . response costs are incurred solely as a result of and in response to . . . actual contamination, the plaintiff must prove that the release by the defendant *actually caused* the contamination" for which response costs were incurred. *Thomas v. FAG Bearings Corp.*, 846 F. Supp. 1382, 1390 (W.D. Mo. 1994) (emphasis added). If the plaintiff was not required to make such a showing, the court explained, "[a] party who discovers TCE groundwater contamination in Missouri could successfully sue every party who released TCE in the entire country." *Id.* at 1387; *see Innis Arden Golf Club v. Pitney Bowes, Inc.*, 629 F. Supp. 2d 175, 186 (D. Conn. 2009) (quoting *Thomas*). On the other hand, the First Circuit held in *Dedham Water* that, because nothing in CERCLA's language suggests that a two-site case be treated differently than a one-site case, "proof that the defendant's hazardous waste actually . . . migrated to" the site where response costs were incurred is not necessary to establish the defendant's CERCLA liability. 889 F.2d at 1154.[24]

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[24] The *Thomas* court construes *Dedham Water* narrowly, determining that its holding applies only in cases where the plaintiff incurs response costs as a result of

After a review of the statute, its legislative history, and applicable case law, the Court holds that the analytical framework that applies in a two-site CERCLA case is no different than the framework that applies in a one-site CERCLA case. Importantly, this holding does not result in the doomsday scenario feared by CEMEX and the *Thomas* court. Rather, Section 107(a) always requires a plaintiff to prove, in its prima facie case, that a release from a facility for which the defendant is a responsible person caused the incurrence of response costs.[25] *See*

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a defendant's release or threatened release, not in cases where the plaintiff incurs response costs as a result of actual contamination. *Thomas*, 846 F. Supp. at 1388, 1390. Nothing in the *Dedham Water* opinion suggests such a narrow construction. Rather, the Court understands *Dedham Water* to hold that a plaintiff need not prove actual migration in any two-site case. *See Dedham Water Co. v. Cumberland Farms Dairy, Inc.*, 889 F.2d 1146, 1150, 1154 & n.8 (1st Cir. 1989).

[25] The Court has found John Hyson's explanation of this requirement particularly helpful: "Section 107(a) clearly requires"—in both one- and two-site cases—"[a] plaintiff [to] prove that its response costs were caused by a release from a site with respect to which the defendant is a responsible party. Thus, in a two-site situation . . . the plaintiff must prove that the release (or threatened release) from the site for which the defendant is a responsible party did in fact cause the plaintiff to incur the response costs for which it seeks recovery." Hyson, *supra*, at 62.

The cases cited by CEMEX in its Supplemental Trial Brief are not to the contrary. For example, the Sixth Circuit has held that "in order to make out a prima facie case [in a two-site case], the plaintiff must establish a causal connection between the defendant's release of hazardous substances and the plaintiff's response costs incurred in cleaning them up." *Kalamazoo River Study Grp. v. Rockwell Int'l Corp.*, 171 F.3d 1065, 1068 (6th Cir. 1999) (citing *Thomas*, 846 F. Supp. at 1387). Other cases discussed by CEMEX quote this standard with approval. *Innis Arden Golf Club v. Pitney Bowes, Inc.*, 629 F. Supp. 2d 175, 185–86 (D. Conn. 2009); *Solutia, Inc. v. McWane, Inc.*, No. 1:03-cv-1345-PWG, 2012 WL 2031350, at *8 (N.D. Ala.

Rhodes v. County of Darlington, S.C., 833 F. Supp. 1163, 1190–91 (D.S.C. 1992) ("The derogation of liability does not eliminate the complaining party's burden of demonstrating a causal connection between a release or threatened release and the incurrence of response costs. . . . The courts, while holding that CERCLA imposes strict liability, have consistently required a plaintiff to demonstrate unequivocally causation between the alleged wrong and the incurrence of necessary response costs." (footnote omitted) (citing *Shore Realty*, 759 F.2d at 1044 n.17; *Artesian Water*, 659 F. Supp. 1269, 1282 (D. Del. 1987); *Idaho v. Bunker Hill Corp.*, 635 F. Supp. 665, 674 (D. Idaho 1986))). As the First Circuit explained in *Dedham Water*, "Obviously, a New Jersey well owner who began to make local-area contamination studies because of releases occurring in California could not claim,

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June 1, 2012). The Court does not believe that the relevant release must be *defendant's* release, as discussed above. However, the Court is in agreement that a causal connection must be established between the release of hazardous substances *at the site for which defendant is a responsible person* and the response costs incurred in cleaning those hazardous substances up. The Court thus fully agrees with the statement in *Innis Arden* that "a plaintiff must provide some evidence linking its response costs to the targeted off-site release of contaminants." 629 F. Supp. 2d at 186 (citing *White v. County of Newberry*, 985 F.2d 168, 174–75 (4th Cir. 1993); *Dedham Water*, 972 F.2d at 459–60 & n.3; *Amoco Oil*, 889 F.2d at 670).

objectively speaking, that the California releases 'cause[d]' the costs . . . ." 889 F.3d at 1158.

It remains unclear what evidence a plaintiff must provide to successfully establish that a release *caused* the incurrence of response costs. While the Fifth Circuit has addressed this question, it did so in a different context: to determine whether a release justified the incurred response costs. *See Amoco Oil*, 889 F.2d at 670.[26] Other courts have developed a variety of schemes to determine whether a plaintiff has carried its burden to demonstrate causation in its prima facie case.

Some courts, including the Fourth Circuit, apply a burden-shifting approach favored by Asarco. Under this approach, a plaintiff "meets its burden on summary judgment if it (a) identifies a contaminant at [the cleanup site], (b) identifies the same (or perhaps a chemically similar) contaminant at the defendant's site, and (c) provides evidence of a plausible migration pathway by which the contaminant could have

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[26] The Fifth Circuit also noted in *Amoco Oil*, a one-site case, that, "in cases involving multiple sources of contamination, a plaintiff need not prove a specific causal link between costs incurred and an individual generator's waste." 889 F.2d at 670 n.8 (citing *United States v. Wade*, 577 F. Supp. 1326, 1333–34 (E.D. Penn. 1983); *Dedham Water*, 889 F.2d at 1155; *Artesian Water*, 659 F. Supp. at 1282). While the Fifth Circuit has cited this portion of *Amoco Oil* with approval in a two-site case, *see Matter of Bell Petrol. Servs., Inc.*, 3 F.3d 889, 893 n.4 (5th Cir. 1993), it has never confronted the issue of causation in a two-site case directly.

traveled from the defendant's facility to the [cleanup] site." *Castaic Lake Water Agency v. Whittaker Corp.*, 272 F. Supp. 2d 1053, 1067 (C.D. Cal. 2003) (citing *Westfarm Assocs. Ltd. v. Wash. Suburban Sanitary Comm'n*, 66 F.3d 669, 681–82 (4th Cir. 1995); *Alcan I*, 964 F.2d at 264–66; *Artesian Water*, 659 F. Supp. at 1281–82; *United States v. Bliss*, 667 F. Supp. 1298, 1311 (E.D. Mo. 1987)). Significantly, this approach places the burden of proof on the defendant to disprove causation: "The plaintiff need not produce any evidence that the contaminants did flow onto [the cleanup site] from the defendant's land. Rather, once plaintiff has proven a *prima facie* case, the burden of proof falls on the defendant to disprove causation." *Westfarm*, 66 F.3d at 681; *accord United States v. Monsanto Co.*, 858 F.2d 160, 170 (4th Cir. 1988) ("Congress has . . . allocated the burden of disproving causation to the defendant who profited from the generation and inexpensive disposal of hazardous waste.").

The test favored by CEMEX, on the other hand, places the burden on the plaintiff to show that a defendant actually contributed to the contamination that caused the plaintiff to incur response costs. For example, in *KRSG I*, the Sixth Circuit affirmed the district court's

opinion that "[t]he existence of a possibility [of migration] does not create a material issue of fact for trial because [the plaintiff] bears the burden of proof to show that [the defendant] *did* contribute to PCBs in the Kalamazoo River, not that it is possible that it might have contributed to the PCBs." *Kalamazoo River Study Grp. v. Rockwell Int'l Corp. (KRSG I)*, 171 F.3d 1065, 1072 (6th Cir. 1999) (emphasis added) (quoting *Kalamazoo River Study Grp. v. Rockwell Int'l Corp.*, 3 F. Supp. 2d 815, 822 (W.D. Mich. 1997)). The *Thomas* court took this conclusion even further, holding that, where contamination is found outside "the immediate vicinity" of a defendant's site, fingerprinting[27] the waste becomes necessary to prove that the release was a "substantial factor" in the plaintiff's incurrence of response costs.[28] 846 F. Supp. at 1390; *cf.*

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[27] "Fingerprinting" waste means using physical and chemical measurements to distinguish different sources of the waste. *See* Trial Tr. IV:16:2–11; Trial Tr. V:109:22–25. The rule set forth in *Thomas* thus requires a plaintiff to provide scientific proof that the defendant is a source of the contamination that caused the incurrence of response costs; without such proof, a court cannot find the defendant liable pursuant to CERCLA § 107.

[28] The "substantial factor" rule originates in the doctrine of causal overdetermination, that is, where two or more causes have concurred to bring about an event but any one of them, operating alone, would have been sufficient to cause the same result. *Artesian Water*, 659 F. Supp. at 1283; *see also Boeing Co. v. Cascade Corp.*, 207 F.3d 1177, 1184 (9th Cir. 2000). Applying the traditional rule of but-for causation to the parties in such a case would compel the conclusion that none of the parties caused the result. *Artesian Water*, 659 F. Supp. at 1283 (citing

ITT Indus., Inc. v. Borgwarner, Inc., 700 F. Supp. 2d 848, 871, 876–77 (W.D. Mich. 2010) (finding that defendants' contamination was a "substantial factor" in causing the plaintiff to incur response costs, but "declin[ing] to adopt a rule" requiring the plaintiff to fingerprint defendants' waste at the cleanup site). This view, said the court, "comports with the notions of fairness that have always been present with questions of causation in our legal system." 846 F. Supp. at 1390.

As discussed above, CERCLA is a broad, remedial statute meant to shift the costs of environmental hazards to the companies and industries responsible for them. Other courts have engaged in extensive discussion and interpretation of § 107, concluding that the text, structure, and legislative history of § 107 strongly suggest that a direct connection between a defendant and the incurrence of response

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W. Keeton et al., *Prosser and Keeton on Torts* § 41, at 268 (5th ed. 1984)). Determining that such a rule was "inadequate" in such situations, the court in *Artesian Water* applied the "broader rule [that] the defendant's conduct is a cause of the event if it was a material element and a substantial factor in bringing it about" as a matter of federal common law. *Id.* at 1283 & n.25 (citing Keeton, *supra*, § 41; *Restatement (Second) of Torts* §§ 431, 433 (1965)). Similarly, the Ninth Circuit held in *Boeing* that "where either polluter's conduct would have caused the same response cost to be incurred in the same amount, and the conduct was of substantially equal blameworthiness, the proper construction of the causation requirement in the statute is that both polluters should be treated as having caused the response cost." *Boeing*, 207 F.3d at 1185. The Court does not believe that this case represents such a situation.

costs is unnecessary. *E.g., Kalamazoo River Study Grp. v. Menasha Corp.*, 228 F.3d 648, 655–56 (6th Cir. 2000) (citing *United States v. Twp. of Brighton*, 153 F.3d 307, 328–29 (6th Cir. 1998); *Alcan I*, 964 F.2d at 266; *Shore Realty*, 759 F.2d at 1044; *United States v. Alcan Aluminum Corp. (Alcan II)*, 990 F.2d 711, 721 (2d Cir. 1993); *Amoco Oil*, 889 F.2d at 670 n.8; *Monsanto*, 858 F.2d at 169). While such a conclusion may belie the "notions of fairness" on which common-law tort doctrines of causation are founded, Congress made this policy choice when it enacted CERCLA into law. *See Bliss*, 667 F. Supp. at 1309 ("[The] structure of CERCLA and its legislative history make clear that traditional tort notions, such as proximate cause, do not apply."). As explained by the Second Circuit, "[t]here may be unfairness in the legislative plan, but we think Congress imposed responsibility on generators of hazardous substances advisedly. And, even were it not advisedly, we still must take this statute as it is." *Alcan II*, 990 F.2d at 716–17.

The Court concludes that CERCLA's goals are better served by the framework laid out by the Fourth Circuit in *Westfarm*. To find CEMEX liable pursuant to CERCLA, Asarco must initially demonstrate that the

same or a similar contaminant is present both at the USIBWC Site and at the CEMEX Site. Asarco must also demonstrate the existence of a "plausible migration pathway" from the CEMEX Site to the USIBWC Site. Asarco need not, however, show *actual* contamination at the USIBWC Site by CEMEX, and certainly need not "fingerprint" the waste as CEMEX's. Rather, the burden falls on CEMEX to demonstrate that it was not the source of any contamination at the USIBWC Site.

The Court notes that a "possible" migration pathway, as discussed in *KRSG I*, is not a "plausible" migration pathway. The Sixth Circuit noted in *KRSG I* that the testifying expert's assumption "that water flowed down the ditch to [the cleanup site]. . . . [was] based solely on speculation and possibility." A speculative migration pathway is not a plausible one. Rather, the Court must conduct an inquiry into the facts as a whole—considering factors such as the location of the cleanup site and defendant's facility, the geology and hydrology of the area, and the nature and quantity of the contamination—to determine whether it is more likely than not that the release from defendant's facility could have migrated to the cleanup site. *Cf. Thomas*, 846 F. Supp. at 1390 (listing possible factors to weigh when determining causation).

Difficult proof problems are inherent in hazardous-waste cases: "the co-mingling and migration of wastes at a disposal site make[] identification of sources scientifically difficult and economically infeasible." *Bliss*, 667 F. Supp. at 1309–10 (citing *United States v. Wade*, 577 F. Supp. 1326, 1332–33 (E.D. Penn. 1983); *United States v. S.C. Recycling & Disposal, Inc.*, 653 F. Supp. 984, 993 n.6 (D.S.C. 1986)). To impose a "fingerprinting" requirement on a plaintiff "might permit the owners and operators of . . . facilities to avoid financial responsibility for the cleanup, and would thus eviscerate section 107." *Artesian Water*, 659 F. Supp. at 1282 (citing *Wade*, 577 F. Supp. at 1332–33). As a result, and in order to effect CERCLA's intent, the Court concludes that a CERCLA plaintiff need not prove actual contamination by a defendant in order to successfully establish that defendant's liability pursuant to § 107.

2. The Quarry

In accordance with the Court's holding, Asarco must demonstrate that arsenic, found both at the Quarry and at the USIBWC Site, could have plausibly migrated from the Quarry to the USIBWC Site. Asarco has failed to carry this burden.

Evidence presented by Asarco demonstrates only that fugitive emissions and surface-water runoff from the Quarry could travel offsite. *E.g.*, Trial Tr. vol. III, at 82–83 (testimony of Dennis that quarrying and transporting limestone can create dust containing arsenic); *id.* at 86, 103–104 (testimony of Dennis that it would be possible for materials to be taken offsite via surface water). Neither of Asarco's expert witnesses rendered any opinions about the Quarry, nor did Asarco present any evidence that would show possible migration pathways of fugitive emissions or groundwater from the Quarry to the USIBWC Site. *See* Trial Tr. vol. IV, at 87–88 (testimony of Dr. Michael Ketterer, explaining that he is not rendering any expert opinions as to the Quarry); *id.* at 181–82, 217 (testimony of Kenneth Ames, explaining the same). Additionally, Asarco presented only minimal, anecdotal evidence that surface-water runoff that traveled offsite would migrate to the USIBWC Site specifically. While Anaya testified that arroyos on the Quarry property could channel surface water toward the river, he did so on the basis of personal knowledge as someone who is "generally familiar" with the terrain in the area. Trial Tr. vol. I, at 162. Additionally, the topography of the Quarry appears to have been altered

significantly by quarrying activities, and at least a portion of the surface water on the site actually runs toward the northwest, away from the river. Pl.'s Ex. 55, at P-55-4, P-55-7; *see* Pl.'s Ex. 36, at P-36-18 photo no. 2 (photograph of storm water collecting in the Quarry). Without evidence of a plausible migration pathway from the Quarry to the USIBWC Site, the Court concludes that CEMEX is not liable pursuant to CERCLA for any hazardous substances released at the Quarry.

3. The Plant

Asarco did, on the other hand, present extensive evidence about contamination at the Plant and its potential migration to the USIBWC Site. As a result, the Court will address each element of Asarco's prima facie case in turn.

a. CEMEX, Inc. is a responsible person with respect to the Plant, a facility from which there was a release of arsenic.

As discussed above, CEMEX, Inc. is a successor in interest to SWPCC, which built and operated the Plant from 1910 to 1985. Parties' Stip. Facts ¶¶ 6, 8, 10. While CEMEX, Inc. itself has never owned or operated the Plant, this fact is not relevant for purposes of CERCLA

liability. *HRW Sys., Inc. v. Wash. Gas Light Co.*, 823 F. Supp. 318, 329 (D. Md. 1993). Rather, the question before the Court is whether the accrued CERCLA liability of SWPCC has been passed on to CEMEX, Inc. *See id.*

Courts have unanimously held that successor liability applies in CERCLA contribution claims. *See* Cooke, *supra*, § 14.01[4][c][iii][B] (collecting cases). "'In case of merger of one corporation into another, where one of the corporations ceases to exist and the other corporation continues in existence, the latter corporation is liable for the debts, contracts and torts of the former, at least to the extent of the property and assets received . . . .'" *Smith Land & Imp. Corp. v. Celotex Corp.*, 851 F.2d 86, 91 (3d Cir. 1988) (quoting 15 W. Fletcher, Cyclopedia of the Law of Private Corporations § 7121, at 185 (rev. perm. ed. 1983)). The record in this case indicates that SWPCC "merged into" Southdown, Inc, which later "changed its name" to CEMEX, Inc.[29] Defs.' Proposed Findings & Conclusions ¶¶ 4–5. As such, CEMEX, Inc. is the corporate entity responsible for any CERCLA liability accrued by SWPCC and Southdown at the Plant.

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[29] For more detailed discussion of CEMEX's corporate history, see *supra* Part I.A.3.

CERCLA § 107(a)(2) extends liability to former owners or operators of a facility, designating as a responsible person "any person who at the time of disposal of any hazardous substance owned or operated any facility at which such hazardous substances were disposed of." 42 U.S.C. § 9607(a)(2). The Court finds overwhelming evidence that materials containing arsenic—a hazardous substance pursuant to CERCLA, *see* 42 U.S.C. § 9601(14)(B); 40 C.F.R. § 302.4—were present on the Plant property at the time of SWPCC's ownership. Stanley Jobe, who leased a portion of the property from 1994 to 1996, testified that he was aware of "extensive contamination" there, Trial Tr. vol. II, at 49–51, and decided not to purchase the property in 1996 or 1998 in part because of its environmental conditions, *id.* at 83, 88; *see* Pl.'s Ex. 56 (1996 letter from Jobe to Southdown regarding possible purchase of the Plant). In addition, the 1989 Raba-Kistner Report identified the extensive presence of dust created by the cement-making process throughout the Plant. Pl.'s Ex. 52, at P-52-5–P-52-9. While it is not likely that all of the dust on the property was CKD, it is likely that at least some was. The Court reaches this conclusion as a result of Ketterer's testimony on this point, *see supra* Part I.B.1.b, and because

CEMEX failed to provide any evidence recording or describing SWPCC's CKD recycling or disposal practices, *see* Trial Tr. vol. II, at 81 (testimony of Jobe that he does not recall seeing any records of disposal or hazardous-waste manifests for CKD at the Plant). Further, it is undisputed that CKD contains arsenic.[30] *See* Trial Tr. vol. IV, at 58; Trial Tr. vol. V, at 67.

Because arsenic is present on the Plant property, the Plant is a facility as defined by CERCLA. *See* 42 U.S.C. § 9601(9) (defining "facility" as "any site or area where a hazardous substance has . . . come to be located"). Further, because the arsenic-containing CKD originated in the cement-making process—a process that occurred from 1910 to 1985, while SWPCC owned and operated the Plant—SWPCC was the owner and operator of the Plant at the time of arsenic's disposal there.[31]

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[30] The quantity of arsenic in CKD, and whether or not it would constitute "contamination" in light of natural-background levels, is not relevant at this point in the Court's analysis. Rather, the Fifth Circuit has held that no quantitative requirement applies to the term "hazardous substance" within the meaning of CERCLA. *Amoco Oil*, 889 F.2d at 669.

[31] "Disposal" is defined by CERCLA in reference to the Resource Conservation and Recovery Act, which defines "disposal" as 'the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste . . . into or on any land or water such that [it] or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters." 42

Finally, the disposal of arsenic on the Plant property also constitutes the release of arsenic from the Plant. *See* 42 U.S.C. § 9601(22) (including "disposing" in the definition of "release"); *Uniroyal Chem. Co. v. Deltech Corp.*, 160 F.3d 238, 245 & n.10 (5th Cir. 1998) (finding that CERCLA's definition of "release" "reach[es] well beyond the mere act of disposal"). As a result, SWPCC—and therefore CEMEX, Inc.—is a

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U.S.C. § 6903(3). The discharge and deposit of CKD during the cement-making process satisfies this definition.

This definition of "disposal," however, precludes the Court from finding CEMEX Construction a responsible person with respect to the Plant. It is undisputed that JCPI, CEMEX Construction's predecessor in interest, leased a portion of the Plant property from 1994 to 1996. *See* Trial Tr. vol. II, at 11. However, Asarco has provided no evidence that any *disposal* of a hazardous substance occurred on that portion of the Plant property during this time. *See Carson Harbor Vill., Ltd. v. Unocal Corp.*, 270 F.3d 863, 879 (9th Cir. 2001) (holding that "gradual passive migration of contamination" is not "disposal"). Although the Fifth Circuit has held that CERCLA "does not limit disposal to a one-time occurrence," *Tanglewood East Homeowners v. Charles-Thomas, Inc.*, 849 F.2d 1568, 1573 (5th Cir. 1988), it did so in the context of additional acts that would, standing alone, constitute disposals pursuant to CERCLA's definition, *see id.* ("[T]here may be other disposals when hazardous materials are moved, dispersed, or released during landfill excavations and fillings."); *see also United States v. CDMG Realty Co.*, 96 F.3d 706, 719 (3d Cir. 1996) (holding that "disposal" includes "not only the initial introduction of contaminants onto a property but also the spreading of contaminants *due to subsequent activity*" (emphasis added)). Asarco has provided no evidence that JCPI "discharge[d], deposit[ed], inject[ed], dump[ed], spill[ed], leak[ed], or plac[ed]" any CKD at the Plant during its leasehold. *See* 42 U.S.C. § 9601(29); *id.* § 6903(3). As a result, and because Asarco failed to brief this matter to any extent, the Court holds that CEMEX Construction is not a responsible person with respect to the Plant.

responsible person with respect to the Plant, a facility from which the release of a hazardous substance occurred.[32]

b. It is plausible that arsenic from CKD at the Plant migrated to the USIBWC Site.

As a general matter, the Court credits the testimony of Asarco's experts, Ketterer and Ames, regarding the likelihood that arsenic from the CKD released from the Plant then migrated to the USIBWC Site, infiltrating the soil, surface water, and groundwater there. Ames testified that it was "very likely" and "very plausible" that arsenic from the Plant, traveling via surface-water runoff, would migrate to the USIBWC Site. Trial Tr. vol. IV, at 192. Both parties' water experts agreed that surface-water runoff from the Plant property would flow down the property toward the southwest, into a concrete-lined culvert under Paisano Drive, and then into the Rio Grande upstream of the

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[32] CEMEX argues that, because it is not a responsible person with respect to the USIBWC Site, Asarco cannot prevail on its contribution claim. *See* Defs.' Proposed Findings & Conclusions ¶ 7. However, the plain language of § 107(a) indicates that CEMEX need not be a responsible person with respect to the USIBWC Site. Rather, a party is responsible under CERCLA when it falls into one of the § 107(a) categories with respect to the site of the release—here, the CEMEX Site. 42 U.S.C. § 9607(a) (discussing a party's relationship with the "facility . . . from which there is a release, or a threatened release"). Requiring a plaintiff to demonstrate that a defendant is a responsible person with respect to the site of cleanup costs would constructively bar all CERCLA contribution claims in two-site cases, thwarting CERCLA's purpose.

American Dam. *Id.* at 152–54; Trial Tr. vol. V, at 167–68. That water would continue down the river to the USIBWC Site, where it would interact with the Site's groundwater. Trial Tr. vol. IV, at 156–57, 163–64; Defs.' Ex. 47, at 7. Additionally, both Ketterer and Ames emphasized that arsenic would leach from CKD "at a rapid rate" once the CKD made contact with water. Trial Tr. vol. IV, at 174; *id.* at 114–17. This testimony, in combination with the presence of CKD on the Plant property and CEMEX's lack of information about any controls put in place to control surface-water runoff, suffices to establish a plausible migration pathway for arsenic between the Plant and the USIBWC Site.

The Court also concludes that Asarco has established a plausible migration pathway for fugitive emissions from the Plant to land on the soil of the USIBWC Site. The two locations are close in proximity, and Ketterer—an air-emissions expert on whose data both parties' experts relied—testified that it would not be scientifically reasonable to say that the Plant did not contribute to the contamination at the USIBWC Site via air emissions. *Id.* at 112. This conclusion is further supported by the height of the Plant's stacks and the warnings about fugitive

emissions contained in the 1989 Raba-Kistner Report. *See id.* at 48; Pl.'s Ex. 52, at P-52-9–P-52-10. While the testimony of Bowers calls into question the impact of arsenic from the Plant on the soil at the USIBWC Site, this data speaks to actual contamination and does not undermine the Court's conclusion that the migration of arsenic from the Plant to the USIBWC Site via fugitive emissions is plausible.

c. The cleanup costs incurred by the Government at the USIBWC Site are not inconsistent with the national contingency plan.

The settlement agreement between Asarco and the Government in this case resolves any and all liability on the part of Asarco for the "[r]esponse costs [that] have been and will be incurred by EPA at [the USIBWC Site] not inconsistent with the National Contingency Plan."[33] Pl.'s Ex. 1, at 5; Pl.'s Ex. 9, at 3. Anaya, the chief of the Environmental Management Division of the USIBWC, testified at trial that all past and future response costs incurred at the USIBWC Site would be consistent with the NCP. Trial Tr. vol. I, at 173 (discussing his

[33] The NCP is a set of "procedures and standards for responding to releases of hazardous substances" that is promulgated by the EPA. *Amoco Oil*, 889 F.2d at 672 (quoting 42 U.S.C. § 9605(a)); *see* 40 C.F.R. § 300.700.

personal responsibility to ensure cleanup at the USIBWC Site will be consistent with the NCP); *id.* at 174 (stating that past response costs incurred at the USIBWC Site were consistent with the NCP); *id.* at 182–83 (stating that future response costs incurred at the USIBWC Site would be consistent with the NCP). To show that response action taken by the Government is inconsistent with the NCP, a defendant must demonstrate "'that the decision was arbitrary and capricious or otherwise not in accordance with law.'" *Bell Petrol. Servs.*, 3 F.3d at 904–05 (quoting 42 U.S.C. § 9613(j)(2)). As CEMEX has made no such demonstration, the Court concludes that the costs that have been and will be incurred by the Government at the USIBWC Site are not inconsistent with the NCP.

B. Allocation

1. Legal Standard

Courts must conduct a two-part inquiry when analyzing the merits of § 113(f) contribution claims: "First, the court must determine whether the defendant is 'liable' under CERCLA § 107(a)," as the Court has done above. "Second, the court must allocate response costs among liable parties in an equitable manner," which the Court will now do.

United States v. Kramer, 644 F. Supp. 2d 479, 488–49 (D.N.J. 2008) (quoting *Goodrich Corp. v. Town of Middlebury*, 311 F.3d 154, 168 (2d Cir. 2002)).

In a rare moment of accord, the parties agree on the appropriate framework for determining the allocation of response costs in this case. Section 113(f) instructs courts to "allocate response costs among liable parties using such equitable factors as the court determines are appropriate." 42 U.S.C. § 9613(f) (2006). While courts may consider any factors they deem relevant, they often use the so-called Gore Factors to guide their allocation analysis. *See Bell Petroleum Servs.*, 3 F.3d at 900–01 & n.12. The Gore Factors include the following:

1. "[T]he amount of hazardous substances involved";
2. "[T]he degree of toxicity or hazard of the materials involved";
3. "[T]he degree of involvement by parties in the generation, transportation, treatment, storage, or disposal of the substances";
4. "[T]he degree of care exercised by the parties with respect to the substances involved"; and
5. "[T]he degree of cooperation of the parties with government officials to prevent any harm to public health or the environment."

Amoco Oil, 889 F.2d at 672–73 (quoting H.R. Rep. No. 99-253, pt. III, at 19, *reprinted in* Superfund Amendments and Reauthorization Act of 1986, Pub. L. No. 99-499, 1986 U.S.C.C.A.N. 3038, 3042). CERCLA-contribution plaintiffs must demonstrate that they are entitled to reimbursement by a preponderance of the evidence. *Kalamazoo River Study Grp. v. Rockwell Int'l Corp.*, 355 F.3d 574, 589–90 (6th Cir. 2004) (citing *B.F. Goodrich v. Betkoski*, 99 F.3d 505, 526 (2d Cir. 1996)).

Notably, while causation between a specific defendant's waste and the incurred response costs is not appropriate for consideration during the liability phase of a court's analysis, whether a defendant caused the incurrence of response costs *is* an appropriate equitable factor in deciding how to allocate responsibility of those costs. *See* John M. Hyson, *"Causation" in CERCLA Private Cost Recovery Actions*, *in Hazardous Substances, Site Remediation, and Enforcement* 59, 65 (Am. Law Inst. 2003). For example, the Sixth Circuit has held that "[a] holding of potential liability does not preclude a zero allocation of response costs" in cases where the plaintiff fails to adequately demonstrate that a defendant caused the incurrence of those costs. *Kalamazoo River Study Grp. v. Rockwell Int'l Corp.*, 274 F.3d 1043,

1047 (2001); *see also PMC, Inc. v. Sherwin-Williams Co.*, 151 F.3d 610, 616 (7th Cir. 1998) ("[The defendant's] spills may have been too inconsequential to affect the cost of cleaning up significantly, and in that event a zero allocation to [the defendant] would be appropriate."). Thus, the Court will consider CEMEX's argument that it did not contribute any actual contamination to the USIBWC Site when determining how to allocate responsibility between the parties.

2. Analysis

The Court begins its allocation analysis by noting that a number of the Gore factors do not help distinguish the parties in this case. Rather, uncontroverted evidence demonstrates that both Asarco and CEMEX conducted industrial operations that involved the generation of hazardous wastes, including arsenic, and that neither party exercised the necessary degree of care in handling those wastes. The record before the Court also indicates that each party has complied with officials only when facing suit or other legal action, conduct that fails to rise to the level of "cooperation." The Court will instead focus its attention on the relative contributions of each party to the

contamination at the USIBWC Site, to the extent that such contributions can be distinguished.

Contrary to its assertions, Asarco clearly contributed substantial amounts of arsenic to the soil and groundwater at the USIBWC Site. Both of Asarco's expert witnesses testified to this fact. Trial Tr. vol. IV at 10 (testimony of Ketterer that Asarco is dominant source of hazardous substances, including arsenic, in area soils); *id.* at 93–94 (testimony of Ketterer that arsenic on the CEMEX Site could have come from Asarco); *id.* at 202–03, 210, 220 (testimony of Ames that Asarco contributed arsenic to groundwater at the USIBWC Site downgradient of the Dam). In addition, none of the remedial investigations commissioned by the USIBWC identified any source of contamination at the USIBWC Site other than Asarco. Trial Tr. vol. I, at 189; *see id.* (testimony of Anaya explaining that the purpose of remedial investigations is to identify all sources of contamination). Finally, the Malcolm Pirnie Report confirms that slag from the former Asarco smelter has contributed significant amounts of arsenic to the groundwater at the USIBWC Site. Defs.' Ex. 51, at ES-3; *id.* § 2-5. As a

result, the Court concludes that Asarco bears significant responsibility for the arsenic contamination at the USIBWC Site.

Evidence as to the extent of actual contamination attributable to CEMEX, Inc. is far less clear. While both of Asarco's expert witnesses stated that the Plant is a certain source of the arsenic at the USIBWC Site, Trial Tr. vol. IV, at 59, 112, 169–71, 192, neither rendered an opinion as to allocation or quantified what CEMEX, Inc.'s contribution might be, *see id.* at 88, 222.

At trial, CEMEX emphasized the possibility that very little, if any, of the dust at the Plant was indeed CKD, Trial Tr. vol. V, at 14, and that much of the dust was inside buildings or crusted over, making it unlikely to be carried off the property by water or wind, Trial Tr. vol. IV, at 188–89, 222. On the other hand, Asarco provided credible evidence that at least some of the dust on the Plant property was CKD and susceptible to migrating, via surface water or fugitive emissions, to the USIBWC Site. *Id.* at 64–67 (testimony of Ketterer that a soil sample from the Plant exhibits chemical properties consistent with CKD); *see supra* Part I.B.1.b. Further, Asarco provided evidence that CEMEX failed to manage and properly dispose of the CKD generated at

the Plant, *see* Trial Tr. vol. II, at 115 (testimony of Jobe); Trial Tr. vol. III, at 79–81 (testimony of Dennis), and that CEMEX never installed any controls to contain runoff from the Plant property, Trial Tr. vol. II, at 30 (testimony of Jobe); Trial Tr. vol. III, at 85–87 (testimony of Dennis). As a result, the Court concludes that Asarco has demonstrated by a preponderance of the evidence that CEMEX contributed at least some arsenic to the contamination at the USIBWC Site.

Bowers testified that CEMEX contributed no arsenic to the soil at the USIBWC Site because no additional fingerprint—beyond the two left by emissions and slag from Asarco—was identifiable there. Trial Tr. vol. V, at 112. In addition, she testified that any air emissions from the Plant would not have contributed to contamination at the USIBWC Site because the arsenic in CKD is within the background level at the Site. *Id.* at 108, 140–41. The Court notes that her analysis relies, in part, on a faulty understanding of the actual background level of arsenic in area soil: soil at the Plant property exhibited a maximum arsenic concentration of 36.2 mg/kg in 2012, well above the background level of approximately 10 mg/kg, *see supra* n.4, and similarly above the Texas Commission of Environmental Quality's action level of 24 mg/kg,

Trial Tr. vol. V, at 102. In addition, analysis conducted by Ames casts doubt on Bowers's conclusions: while Ames agrees that at least two sources of arsenic are present at the USIBWC Site, he disagrees that both sources are attributable to Asarco. Rather, Ames concluded via Principal Component Analysis that the data represents the impacts from air emissions from multiple sources, not simply two different types of contamination from Asarco. Pl.'s Ex. 157, at P-157-9, App. A. Similarly, while Ketterer also agrees that two different types of contamination can be found in the soil, he testified that "the data allow the possibility that there is a CEMEX contribution to the air emissions observed in the soil." Trial Tr. vol. IV, at 18, 20, 99. The Court finds the analysis and opinions rendered by the Asarco experts more convincing; thus, the Court concludes that Asarco has proven by a preponderance of the evidence that arsenic from Plant operations had an impact on the soil at the USIBWC Site.

Hemingway testified that Asarco is the "exclusive source" of groundwater contamination at the USIBWC Site. Trial Tr. vol. V, at 197; *see id.* at 186–87 (using Malcolm Pirnie groundwater map to explain that the pattern of impact is not consistent with more than one

source of arsenic). This assertion is undermined by the Malcolm Pirnie report, which states that the majority of groundwater from the former Asarco smelter discharges downgradient of the Dam. Defs.' Ex. 52, § 2-5. Additionally, the original report analyzing the contamination at the USIBWC Site noted that the maximum concentrations of arsenic in groundwater were detected in the "upper channel" of the Canal, that is, between the American Dam and the end of the USIBWC Field Office Property. Defs.' Ex. 18, at 2-5; *see id.* fig.1.1 (site map).[34] In contrast, the maximum concentrations of lead in groundwater were present in the "middle channel" of the Canal, that is, directly adjacent to the former Asarco smelter, as were the maximum concentrations of both arsenic and lead in soil. *Id.* at 2-4, 2-5. Finally, Ames testified at trial that (1) the arsenic concentrations at well EP-80 can only be attributable to runoff from the CEMEX Site, Trial Tr. vol. IV, at 170, and (2) surface-water runoff from the Plant property would flow down the river and migrate into the groundwater at the USIBWC Site, *id.* at

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[34] While CEMEX may attribute this distribution to the location of the former acid plant on Asarco's property, the Malcolm Pirnie report states that the "elevated arsenic concentrations" at the acid-plant site "appear to be localized and are not likely to be a significant source of arsenic mass flux to the floodplain." Defs.' Ex. 51, § 2-5.

159, 163–64. Since the Court has already determined that runoff from the Plant property likely migrated to the USIBWC Site, the Court further concludes that Asarco has proven by a preponderance of the evidence that arsenic from CKD at the Plant had an impact on the groundwater at the USIBWC Site, particularly upgradient of the Dam.

While the Court therefore finds that Asarco has proven its entitlement to some reimbursement from CEMEX, Inc., the Court has little information on which to base its allocation of costs.[35] Asarco clearly contributed significant amounts of lead and arsenic to the USIBWC Site and therefore should be responsible for the majority of cleanup costs incurred by the Government. On the other hand, CEMEX, Inc. is responsible for a portion of the contamination at the Site and should not be released from that liability simply because it is

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[35] The Court notes that Asarco's burden at this stage was to prove its "entitlement to reimbursement," not its entitlement to a specific amount of reimbursement. *See Kalamazoo River Study Grp. v. Rockwell Int'l Corp.*, 355 F.3d 574, 589–90 (6th Cir. 2004) (citing *B.F. Goodrich v. Betkoski*, 99 F.3d 505, 526 (2d Cir. 1996)). Rather, a CERCLA-contribution plaintiff must provide sufficient evidence to allow a court to make an equitable decision. The Court holds that Asarco has carried this burden even though it did not present expert testimony on allocation: "while 'expert testimony might illuminate the court's consideration of equitable factors, balancing those factors to arrive at an equitable allocation is an essentially judicial function.'" *Kramer*, 644 F. Supp. 2d at 494 (quoting *Chitayat v. Vanderbilt Assocs.*, No. 03-5314, 2007 WL 2890248, at *6 (E.D.N.Y. Sept. 27, 2007)).

difficult to separate its environmental impact from Asarco's. As a result, the Court concludes that CEMEX, Inc.'s equitable share of the incurred costs must be proportionately minimal but not insignificant, and thus determines that CEMEX, Inc. is liable to Asarco for approximately 5% of Asarco's settlement amount, that is, 1.1 million dollars.

III. CONCLUSION

Based on the above findings of fact and conclusions of law, the Court finds that Asarco has established that Defendant CEMEX, Inc. is liable pursuant to § 107(a) and responsible for approximately 5% of the costs incurred by the Government at the USIBWC Site. As a result, the Court determines that Plaintiff ASARCO LLC is entitled to contribution from CEMEX, Inc. in the amount of $1,100,000.00 as well as proper pre- and postjudgment interest. The Court further finds that Asarco has failed to establish that Defendant CEMEX Construction Materials South, LLC is liable pursuant to § 107(a), and thus is not entitled to contribution from CEMEX Construction Materials South, LLC.[36] The

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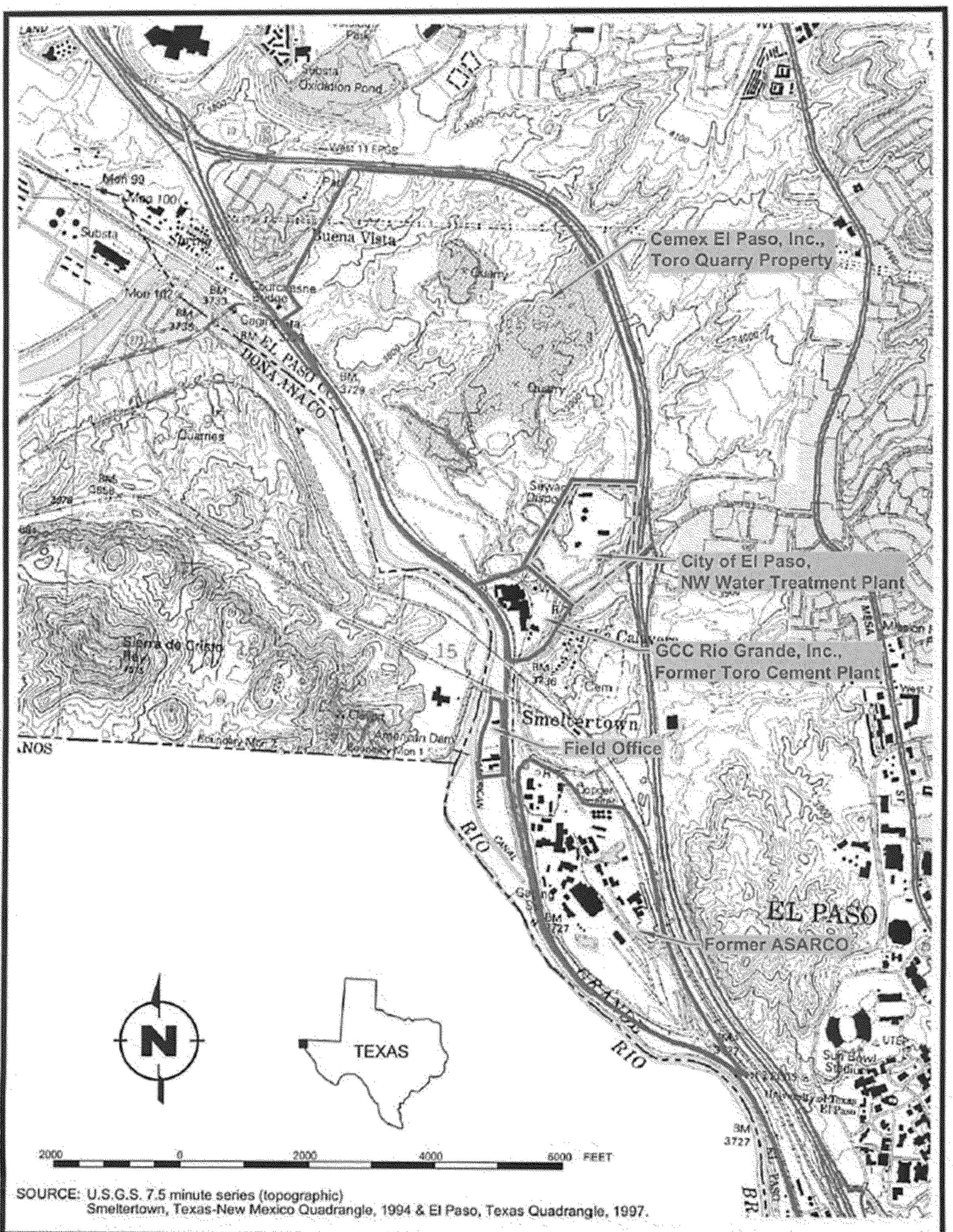
[36] For the Court's analysis on this point, see *supra* n.31.

Court will issue a separate final judgment in accordance with these findings as required by Federal Rule of Civil Procedure 58(a).

SIGNED this **31st day** of **March, 2014**.

PHILIP R. MARTINEZ
UNITED STATES DISTRICT JUDGE

APPENDIX



ENVIRON

DRAFTED BY: ELS/APR | DATE: 07/11/13

SITE LAYOUT
EL PASO, TEXAS

FIGURE
1
19-24220A

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EXHIBIT 2

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF WASHINGTON

ASARCO LLC, a Delaware limited liability company, Plaintiff, -vs- HECLA MINING COMPANY; WILLOW CREEK MINERALS LLC; EQUINOX RESOURCES (WASH.), INC.; WASHINGTON RESOURCES LLC (a/k/a ATLAS MINE AND MILL SUPPLY, a/k/a SUMERIAN MINING CO. OF SPOKANE, a/k/a WASHINGTON RESOURCES, INC.); and CALLAHAN MINING CORP., Defendants.	NO. CV-12-0381-LRS ORDER DENYING CALLAHAN'S MOTION TO STAY (ECF NO. 116)
CALLAHAN MINING CORP., Third Party Plaintiff, -vs- U.S. BORAX, INC., a Delaware corporation; and HILLSBOROUGH RESOURCES LIMITED, a foreign corporation, Third-Party Defendants.	

BEFORE THE COURT is Defendant Callahan Mining Corp.'s ("Callahan") Motion to Stay, ECF No. 116, filed March 19, 2014. A telephonic hearing

was held on April 21, 2014. Gregory Evans and Linda R. Larson participated on behalf of the Plaintiff; Raymond Ludwiszewski and James M. Danielson participated on behalf of Defendant Callahan. Callahan moves the Court for an order staying this action on grounds that Plaintiff Asarco LLC ("Asarco") cannot demonstrate that it has paid more than its fair share of the Washington State Department of Ecology's ("Ecology") total remediation costs for the Van Stone Mine and Mill Site (the "Van Stone Site").

A. Summary of Procedural History and Facts

On June 5, 2012, Asarco filed this case as a statutory right of action for recovery of funds it alleges were owed to it due to its bankruptcy settlement payment of $3.5 million to Ecology for CERCLA liability related to the Van Stone Site. ECF No. 1 at ¶¶ 27-40. Asarco asserts claims against Callahan and other defendants for contribution under CERCLA Section 107(a), 42 U.S.C. § 9607(a). Asarco's Complaint alleges that Callahan is liable as an owner and/or operator under CERCLA because it engaged in mining exploration activities at the Van Stone Mine Site that resulted in releases of hazardous substances. ECF No. 1 at ¶¶ 21, 29, 30. Asarco amended its Complaint on July 10, 2012. Callahan denies any liability for the CERCLA contribution claims asserted against it by Asarco. Asarco asserts this action, under § 113(f) of CERCLA, 42 U.S.C. § 9613(f)), is the sole method by which Asarco can obtain reimbursement from Callahan. ECF No. 1 at ¶ 24.

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The Van Stone Site consists of a 1,400-acre complex consisting of an abandoned pit mining operation and accompanying tailings piles, pipeline, and access roads. ECF No. 117-3 at 12. Investigation has revealed contamination of area soils as well as surface and groundwater. *Id.* at 18-21. Environmental remediation at the site has been ongoing since 1978. *Id.* at 16. While Ecology's remedial investigation (and final remedy selection process) is ongoing, many of the remedial activities that will be undertaken at the site have already been determined and their respective costs estimated. ECF No. 117-4 at 6-9. During Asarco's bankruptcy, an Ecology official filed a declaration describing the anticipated remediation activities and describing their costs in order to assist the bankruptcy court in estimating the value of Ecology's claim against Asarco. *Id.*

B. Callahan's Arguments

Callahan argues that the total cost of the cleanup is a necessary fact to evaluate Asarco's claim for contribution from Callahan under the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), 42 U.S.C. § 9613. Callahan reasons that because Ecology's total costs are not currently ascertainable, the Court should stay this action until Ecology at a minimum completes selection of a final remedy for cleanup of the Van Stone Site, at which time Ecology's final costs may be more accurately determined. Callahan is aware that Asarco paid $3 million in remediation and a half million dollars in prejudgment interest. Callahan does acknowledge that Asarco's expert report

provides an estimate of total costs as well as an estimate of Asarco's allocable share. However, Callahan disagrees with Asarco's expert report and informed the Court at the April 21st hearing that what is Asarco's fair share, "will be a heavily litigated matter if this case ever goes through full litigation. . . .". ECF No. 127 at 5. Callahan concludes that a stay will not create any hardship on Asarco and a stay will promote judicial economy and resolve factual issues.

C. Asarco's Opposition

Asarco responds that it has the statutory right, granted by CERCLA § 113(f), to pursue contribution from other potentially responsible parties ("PRPs") based on its settlement with Ecology of its CERCLA liability related to the Van Stone Site. Asarco asserts that Callahan should not be allowed to use a motion to stay to avoid adjudication of Asarco's statutory right to contribution, which motion seeks to have this case stayed until Ecology completes its remediation of the Site-a period of time that will undoubtedly be lengthy and which period Callahan does not even attempt to estimate. Further, Asarco argues that federal case law does not favor a stay under the circumstances and granting a stay in this case is contrary to the public policies enacted in CERCLA, as it would deter other companies considering a voluntary settlement under CERCLA from entering into a settlement because potentially responsible parties may never be pursued during a lengthy clean-up.

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D. Analysis

The Court does not find a stay will promote judicial economy and resolve factual issues as Callahan contends. The Court respectfully denies Callahan's motion for a stay in this matter. The Court notes that approximately a year ago Callahan requested that its Third Party Complaint against Third Party Defendants U.S. Borax, Inc. and Hillsborough Resources Limited be stayed pending resolution of all claims that have been asserted against Callahan by Asarco in this action. ECF No. 83. Asarco opposed that motion but the Court nevertheless granted Callahan's motion to stay its Third Party Complaint so that Callahan's liability to Asarco could be determined. The Court finds this case can proceed, even recognizing that the exact final remediation cost may not be ascertainable at this time. This is so because the case is ripe for determination of Callahan's liability to Asarco, and if such liability exists, the shares of the parties based on a percentage of the total cleanup costs anticipated can be reasonably determined. These determinations are not dependent on a final cost being ascertainable at this juncture and the Court notes that expert reports on the Van Stone Site have been prepared as recently as January 2014. ECF No. 117-3. Judicial economy dictates in favor of determination of the liability of alleged PRPs and allocable shares at this juncture. Accordingly,

IT IS HEREBY ORDERED that Callahan's Motion to Stay, **ECF No. 116**, is **DENIED.**

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IT IS SO ORDERED. The District Court Executive is hereby directed to enter this order and furnish copies to counsel.

DATED this 2nd day of May, 2014.

s/Lonny R. Suko

LONNY R. SUKO
SENIOR UNITED STATES DISTRICT JUDGE